DEVELOPING AN EVALUATION MODEL FOR HOTEL ELECTRONIC CHANNELS OF DISTRIBUTION

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Abstract

This thesis describes the development of a portfolio of criteria for use in evaluating business-to-customer electronic channels of distribution in the hotel industry. The scope of the investigation was limited to the use of electronic distribution by chain hotels and specifically researched evaluation practices in the top 200 hotel worldwide brands. Hotel electronic distribution is currently in period of rapid evolution. Developments in technology have acted as a catalyst, prompting growth in both competition and cooperation between channel constituents, resulting in a significant increase in the number of potential channels available. While many hoteliers have adopted a shelf-space approach of "more is better", the expanding number of options, coupled with the costs associated with channel adoption, management and use, make such a strategy unsustainable. As the literature makes little contribution as to how such channels should be comparatively evaluated, a grounded theory approach was used to explore the issue. A Delphi study with experts in the field of hotel electronic distribution was used to establish, validate and assign priorities to an initial set of decision factors for use when the adoption of an electronic distribution channel is being considered, and when its ongoing use is being assessed. The study revealed that it is channel performance in practice, rather than abstract financial or strategic measures, that should be the prime consideration in the channel adoption decision. In contrast, when the ongoing use of a channel is being considered, the analysis should be more multifaceted, incorporating financial, marketing, strategic, operational and technical aspects. These exploratory findings were subsequently validated using an email survey of industry distribution managers, which confirmed the acceptability and applicability of the range of factors identified. A conceptual model incorporating the findings of both studies was subsequently developed, and its use illustrated in the creation of a computerised system to help facilitate the assessment process. The usefulness of the study could be expanded by broadening its scope to consider the needs of independent hotels, by considering the assessment of business-to-business channels, and by validating the accuracy and reliability of the model by testing the relationship between channel assessment and business performance.

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List of Abbreviations

ARR	Average Rate of Return
B2B	Business to Business
B2C	Business to Customer
CAPITA	Competitive Advantage Provided by an Information Technology Application
CHRIS	Consortium of Hospitality Research Information Services
CRS	Central Reservation System
DMS	Destination Management System
GDS	Global Distribution System
HEDNA	Hotel Electronic Distribution Network Association
HSMAI	Hotel Sales & Marketing Association International
HTML	Hypertext Mark-up Language
IBM	International Business Machines
IFITT	International Federation for IT and Travel & Tourism
IH&RA	International Hotel and Restaurant Association
IRR	Internal Rate of Return
IS	Information Systems
IT	Information Technology
NPV	Net Present Value
PMS	Property Management System
R&D	Research and Development
REIT	Real Estate Investment Trust
SME	Small or Medium sized Enterprise

SPSS	Statistical Program for Social Sciences
TIC	Tourism Information Centre
UK	United Kingdom
URL	Universal Resource Locator
WAP	Wireless Application Protocol
WHATT	Worldwide Hospitality & Tourism Trends
WTO	World Tourism Organisation
WTTC	World Travel & Tourism Council

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Chapter One

Chapter One – Introduction

> "A profession, no less than a craft, is shaped by its tools. The profession of marketing, its theories, its practices, and even the basic sciences that it draws on are determined by the tools at its disposal at any moment. When the tools change, the discipline adjusts, sometimes quite profoundly and usually quite belatedly. The introduction of television advertising 50 years ago was just such a disruptive event and marketing theory and practice are still responding, evolving their understanding of how the tool works and how its effects should be measured".
>
> (Deighton 1996).

The points made above by Deighton in a discussion of the evolution of interactive marketing are especially relevant today in the hotel sector where one of its most powerful tools - electronic distribution – is currently in a state of rapid development. Despite the hotel sector's conservative reputation with regard to new technologies, the use of electronic distribution has nevertheless quickly gained acceptance. While effective distribution is one of the cornerstones of any competitive strategy, with the hotel product it is particularly important as accommodation is both perishable and sold in a market characterised by high capital costs, increasing competition and shrinking margins (Vialle 1995). A room left unsold on a particular night cannot be stored and subsequently offered to the customer at a later date. Thus its revenue is lost, making the sale of each room each night at the optimum price extremely important to the overall profitability of the hotel (WTO 1991). However achieving such an objective has become increasingly difficult. As will be discussed below, demand is increasing but the supply of hotel rooms is increasing at a faster rate.

Existing properties are building additional rooms, new properties are opening as hotel chains seek to expand and new forms of accommodation (such as economy hotels, all-inclusive resorts, apart-hotels and timeshare resorts) are increasingly gaining acceptance with travellers as alternative forms of accommodation.

The use of distribution channels forms a key element in overcoming this challenge. Distribution channels have two separate but interrelated functions; to provide consumers with relevant and timely information to help them in their purchase decision; and to facilitating the purchase itself (Leren 1982). Effective information distribution is extremely important in selling the hotel product (Wagner 1991). Its intangibility, heterogeneity and diversity mean that consumers depend on accurate, timely, high quality information to help them differentiate among competing properties (Poon 1994). Related to this is the issue of convenience – both in terms of finding the appropriate information and also in terms of facilitating the reservations and payment processes (Castleberry, Hempell et al. 1998). This is particularly true where the sale is facilitated through an intermediary, who by definition has an interest in handling the most easily sold products and may well direct clients to competing suppliers if their product is more easily accessible (Bennett 1993). One of the key enablers in distributing information and making the reservations process more convenient is information technology, which, as a result, has become an almost ubiquitous feature of hotel distribution. However electronic distribution channels are currently in a state of transition as a result of technological advancements, new and emerging players and a shift in the balance of power among suppliers, buyers and intermediaries (O'Connor 1999). Furthermore the costs associated with distribution are rising both due to the increasing number of intermediaries becoming involved in

the hotel distribution process, and the complex technological infrastructure needed to support the distribution of room inventory to the growing spectrum of current and potential distribution channels (Connolly 1999). The decision as to which channel(s) to use has become increasingly complex, and hotel managers currently have few tools and little guidance to help them determine which best match their needs (Weill 1991). The purpose, therefore, of this research study, is to investigate the hotel electronic channel of distribution evaluation decision. The ensuing thesis seeks to shed light on the factors considered in both the channel adoption and evaluation processes, the techniques that are currently and could potentially be employed and to propose a methodology to improve the effectiveness of the evaluation process.

1.1 Background and Overview

This section introduces the background and context of the study. A brief overview is provided of the tourism industry in general and the hotel sector in particular to place the study in context. The use of electronic distribution by hotels is similarly discussed, and the problems associated with selecting appropriate electronic distribution channels highlighted.

1.1.1 The Tourism Industry

Tourism is defined by the World Tourism Organisation (WTO 1991) as "the temporary, short-term movement of people to destinations outside the places where they normally live and work, and their activities during their stay at these destinations". The tourism industry, therefore, can be defined as all those individuals and organisations that are involved in the production, distribution and consumption of tourism products. The industry is fragmented, comprising a variety of different sectors

with companies ranging in size from the very large to the very small (Bennett 1996). Companies can be distinguished based on their functions. *Tourism principals* produce the basic tourism products such as transportation, accommodation, catering or entertainment. *Tour operators* assemble components produced by the principals in the transportation, accommodation and other tourism sectors, and sell these onwards to consumers as travel packages. Their main added value lies in information gathering and reduction, as well as in achieving economies of scale through mass production. *Travel agents* act as distributors, brokers or retailers on behalf of principals and tour operators, and sell the latter's products to the consumer in return for a commission. Their main functions, therefore, are the provision of travel information and the liaison with both principals and tour operators to reserve tourism products for the consumer. Lastly, local, regional and national *tourist boards* assist in marketing destinations and may also undertake a variety of other management or research functions. In certain cases they too act as information brokers and reservation agents for tourism producers in their designated area.

Tourism is acknowledged to be one of the fastest growing and most significant industries in the world, both based on gross domestic product and employment (World Tourism Organisation 2000). Its economic impact (both in terms of its financial value as well as number of people employed) is well documented (Strategic Advisory Group 1997). The World Travel and Tourism Council (WTTC) estimates that the tourism industry produced more than US$3.3 trillion in gross output worldwide in 1995, being equivalent to nearly 11% of the world total. International tourism receipts are an indispensable source of foreign exchange earnings for many countries, ranking in the top five export categories for 83% of countries worldwide

and acting as a leading source of foreign exchange in at least 38% (World Tourism Organisation 2000). Furthermore, the significance of these receipts is amplified, as tourism has a high multiplier effect, giving a disproportionate benefit to the economy as a whole (WTO 1997). In addition, an estimated 212 million people are employed in the industry worldwide, representing nearly 11% of the global workforce (Karcher 1997). Tourism is also important in economic and regional development. It accounts for a high proportion of employment in many poorer countries and in the poorer regions of higher income countries (Akehurst, Bland et al. 1993). Tourism also helps to discourage migration from rural areas, helping to reduce regional depopulation (WTO 1997).

Throughout the latter part of the twentieth century, spending on tourism has remained resilient, despite periodic unfavourable economic conditions on a global basis. Since the 1950s, when international travel started to become accessible to the general public, tourism activity has risen each year at an average rate of 7.1 per cent from 25 million to 595 million in 1996 (WTO 1997). International tourism arrivals reached 657m in 1999, with receipts from international tourism rising by 3.2% to US$ 455 billion (World Tourism Organisation 2000). Forecasts say this trend will continue and accelerate, driven by factors such as ageing populations in the industrial countries, higher levels of education, more widespread paid leave and shorter working hours (WTO 1997). Recent figures indicate that tourism will grow at an average annual rate of 4.3% for tourism arrivals and 6.7% for expenditure, resulting in activity levels of 1.6 billion international tourist arrivals worldwide, spending over US$ 2 trillion by the year 2020 (World Tourism Organisation 1999). Domestic tourism is

also forecast to remain important, with the 10:1 ratio between domestic and international tourism activity likely to be maintained (WTO 1997).

However, in parallel with the growth discussed above, the nature of the tourism business has begun to change. Since the beginning of the 1990s, business travellers have searched for better value as a result of more restricted corporate travel budgets (WTO 1991). Both business and leisure travellers have become more experienced and sophisticated (Muqbil 1998). Travellers have higher expectations, and are more aware of the options available to them, more aggressive in voicing their demands and make sophisticated trawls for information in an effort to find the best combination of price and quality (Cline and Rach 1997). With leisure travel, there is also a trend for multiple short breaks dispersed throughout the year, either as a supplement to or as a replacement for the annual holiday (World Tourism Organisation 1999). Such breaks tend to be more spontaneous and last minute (Davis and Davidson 1991), which coupled with the increased confidence of consumers after many decades of experience travelling domestically and internationally, means that the majority tend to be independently organised (Davidson 1998). In summary, the typical traveller is more aware, more demanding, more cost conscious yet at the same time higher spending, is travelling more frequently, more independently and with shorter lead times. All of these characteristics have major implications for how tourism suppliers distribute their product, and to a large degree necessitate the effective use of information and communications technologies to facilitate the distribution process.

1.1.2 The Hotel Sector

The hotel sector is an important component of the tourism industry, being the one that provides accommodation (and associated ancillary services) to travellers. Hotels are very diverse, ranging from small bed and breakfasts in rural locations to five thousand room complexes in major international cities. Variations include all suite hotels, conference and convention hotels, inns, resorts, spas, country houses, theme hotels, limited service hotels, and economy properties (Olsen 1998). Similarly the range of prices also varies. Room rates at budget hotels may be as low as US$25 per night, while luxury hotels may charge several thousand dollars per night (Singh 1997). At the time of writing, the most recent study available placed the size of the international lodging industry at 11.3 million guest rooms at the end of 1995 (World Travel and Tourism Council 1995). Table 1.1 provides an overview of the dispersion of the industry. The majority of hotels are concentrated in two regions – Europe and North America with 55 percent and 22 percent of the world's hotels respectively. It's also evident from the table that the average size of hotels in North America is much larger than in Europe (56 vs. 28 rooms) – reflecting one of the key differences between these two markets. The European hotel sector is dominated by small, family type, operations, with nearly 95% being classified as Small or Medium Sized Enterprises (WTO 1997), while chain affiliated properties are more common in North America.

US based chains currently are most common although this is rapidly changing as a result of a growing number of mergers and acquisitions (Hotels 1998). Irrespective of region, international hotel chains dominate the industry. International chains are defined as those companies that have their corporate office in one country and operate, own, manage or franchise hotels in more than one country (Singh 1997).

Despite only controlling a minority of the total number of rooms (approximately 5% of total room supply), international chains tend to exert a disproportionate influence, as they tend to be the larger and more profitable operations (Cline and Rach 1997). Together, the top ten worldwide hotel chains generate almost one quarter of total industry sales (Olsen and Zhoa 1997). In 1998, chain affiliated properties achieved an average occupancy of 68% with an average daily rate of US$93 in comparison with the occupancy of 63% and an average rate of US$84 in independent hotels (Horwath International 1999). In addition, independent properties tend to be less profitable, delivering trading profit per room seven times less than their chain counterparts (Slattery 1992). As a result of this, the industry is expected to continue to polarise, with an increasing number of mergers and acquisitions resulting in a small number of very large companies controlling the market (Hotels 1998).

A differentiation must also be drawn between hotel ownership and hotel operations. Although many chains both own and operate many of their properties, alternative strategies such as management contracts and franchises are more common, as can be seen from Table 1.2 (Singh 1997). With each alternative management strategy, the dominant feature is the importance of the hotel chain's brand – the perception of the company in the eyes of the customer. Each option gives the property a brand – in effect making the issue of ownership irrelevant from the point of view of marketing and distribution (Powers 1992).

Table 1.1 - The International Hotel Industry

Region	*Total Revenue (10^9) US$*	*Number of Hotels*	*Percentage of Total Hotels*	*Total Number of Rooms*	*Average Size of Hotel (rooms)*
Africa	6.3	10,769	3.5	343,347	32
Caribbean	7.9	5,290	1.7	155,253	29
Central America	1.2	1,160	0.3	41,221	35
North America	62.1	66,943	21.7	3,738,977	56
South America	9.8	14,576	4.7	487,787	33
Northeast Asia	23.7	10,192	3.3	719,480	71
Southeast Asia	12.8	13,211	4.3	453,657	34
South Asia	3.1	3,663	1.1	159,417	44
Australia and Pacific Islands	6.6	10,082	3.2	229,319	23
Middle East	9.2	4,735	1.5	162,178	34
European Economic Area	87.5	151.945	49.4	4,242,193	28
Other Europe	22.5	19,178	6.2	676,631	35
Total	247.8	307,683	100*	11,333,199	37

Source: (World Travel and Tourism Council 1995)
* Totals may not add up to 100 due to rounding

However the use of branding is not evenly distributed across the entire industry. Only 30% of European hotels are affiliated to a chain, as against approximately 70% in the United States (Muqbil 1998). This can in part be explained by the presence of the many smaller independent properties discussed above. In a market where supply is scarce, it is easy to develop standardised properties. On the other hand, it is far more difficult to replace existing supply, even where this has failed to keep pace with the demand for modern facilities and quality service, as is the case in Europe (HTR 1999). However, this pattern is likely to change and the branding of hotels is expected to become more uniform across the world. Consumers understand the reliability and consistency message of hotel brands, and are increasingly choosing them in preference to independent properties, permitting branded companies to deliver a performance premium over their independent competitors (PriceWaterhouseCoopers 2000). As a result, branded properties enjoy both higher occupancies and higher average room rates than independent hotels. Inevitably this encourages scarce development capital to flow towards the branded operations, facilitating their growth at the expense of unbranded operations. This trend is already evident in the US market and is likely to spread rapidly to other regions, thus increasing the importance of branded properties as a segment within the industry.

Table 1.2 – Breakdown of Hotel by Management Type

Type	Percent of Chain Units	Percentage of Room Supply	Percentage of Room Supply		
			US	Europe	Asia
Franchise	72.3	59.0	76.9	41.3	10.9
Management Contract	12.9	18.1	11.5	25.3	53.5
Owned	14.8	22.8	11.4	33.3	35.6
Total	100.0	100.0	100.0	100.0	100.0

Source: (HTR 1998)

1.2 Distributing the Hotel Product

According to Connolly (1999) "merchants have wrestled with determining the best approaches to delivering their products to the marketplace since the early days of farmers' markets". Many generations later, this challenge still exists and has perhaps become more difficult as a result of today's ever changing, increasingly competitive and global markets. The hospitality industry is no exception; the need to establish more and better distribution channels is just as pronounced as that for any other industry. As was mentioned above, hotel channels of distribution help address this problem by providing "sufficient information to the right people at the right time and in the right place to allow a purchase decision to be made, and to provide a mechanism where the consumer can make a reservation and pay for the required product" (Go and Pine 1995). While extensive use is made of both direct sales and intermediaries, developments in information and communications technologies have opened up a large number of additional channels of distribution for the hotel industry.

In "Being Digital", Negroponte described the convergence of IT, telecommunications and content as the single most important event shaping business in the future (Negroponte 1995). This digital convergence, supported by miniaturisation, portability, declining costs and more powerful applications, is part of the trend driving computers to ubiquity in everyday life – so much so that they are deemed essential for survival in today's world and no longer luxury items for the business professional or the elite (Connolly 1999). This movement is giving rise to a digital economy where speed, agility, connectivity and the ability to amass and subsequently employ knowledge are key competitive ingredients (Tapscott 1996). In the hospitality industry, distribution channels represent the quintessential example of the convergence of technology, communications and content. This is especially true as the Internet is introduced into the equation, as it provides consumers with real time access to detailed multimedia information and reservations capabilities twenty-four hours a day, 365 days a year.

Within tourism, the potential of electronic distribution was first demonstrated by the airline sector. Here, computerised systems that had been originally developed to help manage seat inventory were forwardly integrated into the offices of travel agents (Knowles and Garland 1994). This facilitated direct access to information about flights, availability and pricing, and also facilitated direct bookings on the system. Making information and booking facilities available in this way brought many advantages. Administrative and labour costs were greatly reduced, and the efficiency of the booking process was increased as confirmation delays were eliminated (Archdale 1993). Both the geographical scope and the product portfolio distributed by these systems was subsequently broadened, and today the Global Distribution Systems (GDS) distribute a broad range of travel related products to a variety of different audiences. Hotel rooms

were one of the first complementary products offered over the GDS. At first, hotel companies tried to incorporate room inventory directly onto the airline system. However, as the latter were designed solely for use with airline seats, they could not easily incorporate the data requirements of the more diverse hotel product. As a result, the larger hotel chains began to develop their own computerised systems, incorporating more suitable database architectures and methods of operation, subsequently interfacing them with the GDS to give access to the travel agent sector at a relatively low capital cost (Burns 1994). Alternative options were developed for both independents and smaller groups (McGuffie 1994). These included outsourcing the reservation function to a third party company, joining a marketing consortium or, in certain regions, making use of Destination Management Systems. The latter focus on distributing a comprehensive catalogue of tourism products for a given geographical region and generally have some element of public funding, thus making them more financially attractive to smaller chains and independents (Vlitos-Rowe 1992).

This effectively was the state of play in hotel electronic distribution at the beginning of the 1990s. Each system co-operated with the others in a mutually beneficial relationship. However the development of the World Wide Web (Web) as an electronic commerce medium in 1994 had a profound effect on hotel distribution. As Connolly (1999) points out: "Today much has changed in terms of the tools, technologies, players and more in the area of hotel electronic distribution channels. The landscape is entirely different than when Emmer et al (1993) first embarked on describing GDS, given the recent developments of internet based travel services and agencies, intelligent software agents and more open access to hotel availability". In addition to co-operating, the majority of the principals started to compete with the others by offering information and

reservation services directly to the consumer over the medium of the Web (Coyne 1995). In addition, new intermediaries have appeared in the hotel electronic distribution arena (Castleberry 1998). While many of the original electronic channels were linear, closed and dedicated, the emerging distribution model is better described as being multi-dimensional, with most participants able to distribute information to, and complete a transaction with a customer using a variety of different routes (Anderson Consulting 1998). Currently channels continue to evolve and have become increasingly interconnected as intermediaries form strategic alliances with one another and attempt to develop multiple routes to the customer. Thus, both the number of channels and the complexity of the network are increasing, and the distinction between channels is also become less distinct as the systems become interconnected at multiple levels (Anderson Consulting 1998). Since no single channel is likely to become dominant in the near future, most hotels have to utilise multiple parallel channels to effectively reach the marketplace (Madison 1998). However, since not all distribution channels are of equal value or importance, companies must carefully weigh their investment decisions in light of their organisational goals and performance standards (Crichton and Edgar 1995). The key question, therefore, is which channel or combination of channels, should they be using? Both increasing complexity and the rapid pace of change make it difficult to answer this question (Castleberry, Hempell et al. 1998). Yet increased competition, shortages of capital and rising costs make such evaluation and management of electronic distribution channels essential (Olsen 1997).

1.3 Evaluating Hotel Electronic Channels Of Distribution

The question arises therefore, of how to evaluate a hotel electronic channel of distribution? In the past, there is evidence that many companies did not perform such

evaluations to any great extent, preferring instead to adopt a "shelf space" approach to channel adoption, including their products on all available channels on the premise that more is better. However as companies expand the number of distribution channels used, they add to the complexity of their system, raising the cost of overhead and the management and technological infrastructure required (Connolly 1999). Thus hotel companies must take a more discriminating approach and understand the merits, booking potential, opportunities and costs associated with participation in each channel. Only those demonstrating added value to the firm should be utilised. The budget airline sector, and in particular companies such as SouthWest, EasyJet and RyanAir have long recognised this and limited the channels over which their products are distributed. For example, EasyJet has elected not to participate in the GDS that service the travel agent community and distribute the majority of airline seats worldwide. Instead they encourage customers to book directly, either over a toll-free telephone number or over the company's Website, thus saving on GDS fees and travel agent commissions. However such a decision can only be taken after a thorough evaluation of each of the options available and an assessment of how they contribute to the company's objectives. As was discussed above, the number and complexity of channels available to hotels has grown and continues to grow rapidly, yet there is little evidence that similar evaluations are being made in this sector.

Irrespective of actual industry practice, the literature suggests that information technology related projects should be evaluated in one of two manners – from a financial analysis perspective or from a strategic perspective (Lubbe and Remenyi 1999). However, as will be discussed in Chapter Two, financial approaches suffer from limitations when evaluating electronic distribution channels in that neither costs nor

benefits can usually be clearly defined. Furthermore, the majority of such techniques take a short-term approach, which may be inappropriate given the growing strategic importance of electronic distribution systems. However evaluation from a strategic perspective is also problematic as when technology becomes a strategic issue, measurement difficulties are enhanced since "there are no commonly accepted concepts to measure their proper value and no agreement as to which variables to measure" (Olsen 1998). Thus there is no common denominator and evaluating performance becomes more subjective as projects "can be looked at differently depending on the vantage point chosen" (Hitt and Brynjolfsson 1996). Thus deficiencies exist in the approaches suggested by the literature, and there is much evidence that evaluation decisions are being made without a clear frame of reference (Kettinger, Grover et al. 1994). The dilemma, therefore, is what can or should be used in their place?

1.4 Research Objectives

As the aforementioned discussion illustrates, the current bodies of knowledge contain many shortcomings with respect to hotel distribution channel adoption and evaluation. With so many new options becoming available and the capital investment required for each channel on the rise, just how should hotel companies determine in which set of distribution channels to participate. Seeking an answer to this question is the primary aim of this study. Specifically the study will establish and prioritise a portfolio of techniques for use in the hotel electronic channel of distribution evaluation decision, both when a channel is initially being considered and when its ongoing use is being assessed. As there are few commonly accepted techniques available to carry out such evaluations, the industry would clearly benefit from such research, making the study both relevant and timely. The study represents a continuation of a stream of research

devoted to establishing a literature base and a better understanding of hotel electronic distribution channels. This was begun by authors such as Moore and Selling (1977) in relation to the use of technology in general in the hotel sector, and has been continued by Bender (1986), Emmer, et al (1993), Smith David et al (1996), culminating in Connolly's 1999 PhD dissertation that focused on the hotel information technology investment decision. This study attempts to build on these prior works by addressing the decisions leading up to the choice and implementation of hotel electronic distribution channels in chain hotels. As can be seen from the above discussion, this would help close an important knowledge gap, and thus represent a valuable contribution to the pool of knowledge in the fields of both hospitality information technology and hospitality marketing. Thus its findings should be valuable and useful to both industry practitioners and academics alike.

Specifically the objectives of the study are:

- To develop an appreciation of the current hotel electronic distribution environment.
- To establish the level of reservations generated by each of the electronic distribution channels currently being used by the major hotel chains worldwide, and to forecast their future potential.
- To establish an understanding of the techniques currently being used to evaluate electronic distribution channels in the hotel sector.
- To measure the usage of such techniques among hotel chains.
- To propose additional techniques that could be used to evaluate hotel electronic channels of distribution.

1.5 Chapter Outline

The primary purposes, therefore, of this study are to explore the hotel electronic distribution channel evaluation decision making process, and subsequently develop a model that can be used to evaluate and assess such channels with the objective of choosing the one(s) most suited to a particular property's requirements and operational constraints. This process by which these aims are achieved is described in five chapters.

- **Chapter One, the current chapter, presents an introduction to the study of the evaluation of hotel electronic distribution channels.** It provides the background and sets the stage for what follows. Specifically, it places the project in context and highlight the importance, relevance and timeless of the issue.
- **Chapter Two traces the origins of electronic distribution in the hotel sector.** The range of established systems are described, and the effect of the introduction of the Web into the travel distribution arena is detailed. The latter appears to have acted as a catalyst, prompting a growth in the number and complexity of distribution channels available, thus necessitating the objectives of this study. Methods of evaluation identified in the literature are also reviewed, and the lack of a suitable method for use with hotel electronic channels of distribution is highlighted.
- **Chapter Three explains the research design used in the study, detailing the rational behind the choice of research methods utilised and the advantages / limitations of these choices.** The chapter also explains the research methodology used in both phases of the primary research for this project, namely a Delphi study undertaken with an expert group and an e-mail survey

undertaken with the electronic distribution managers of the major international hotel brands.

- **Chapter Four presents the findings of the Delphi study undertaken to establish the range of techniques that could be used to evaluate electronic channels of distribution in the hotel sector.** The findings of each of the three rounds of the Delphi are discussed and analysed. In particular, a typology of the electronic distribution channels available to hotels at the time of the study is presented, along with a forecast the future potential of each one identified. A range of the possible techniques that could be used to evaluate hotel electronic channels of distribution is then proposed based on the suggestions and importance rankings of the expert panel.
- **Chapter Five presents the results of the survey undertaken to establish both the actual usage of evaluation techniques by the major international hotel brands and the acceptability of range of techniques identified in Chapter Four to managers in the industry.** This survey validates the findings of the Delphi process by confirming the range of evaluation factors identified as being perceived appropriate by industry practitioners.
- **Chapter Six presents the study's conclusions, applicability to industry practitioners and academic scholars, limitations and implications for further research.** A computerised model is developed as an example of how the knowledge identified in the study could be implemented and used by industry practitioners is also described, and its use illustrated in a case study that compares the potential adoption of three alternative distribution channels by a particular property.

Chapter Two

Chapter 2 – Electronic Distribution

2.1 Introduction

Technology, and information and communication technology in particular, fulfils various roles in tourism. Technology can act as "a creator, protector, enhancer, focal point and / or destroyer of the tourism experience" (Stipanuk 1993). However, as many people (see for example, Poon (1993), Cline and Rach (1997), Buhalis (1999), Coathup (1999)) believe that technology's greatest impact is its ability to improve the sale and delivery of goods and services, this study will focus solely on the role of technology as a tool to distribute the hotel product. Understanding this role can be troublesome. As was discussed in Chapter One, electronic distribution is constantly changing and rapidly evolving, and has been identified as one of the top five most volatile factors affecting the hotel industry (Olsen, Murthy et al. 1995).

This chapter makes the case for the use of electronic distribution in the hotel sector, as well as outlining the current state of research in the area. This is done to both act as an aid to understanding current developments, and to support the arguments offered in Chapter One about the relevance and timeliness of this research. The chapter is divided into three main sections; the first part reviews the literature on hotel electronic distribution to give an overview of the historical development and current environment of the arena. Its purpose is to provide a basis for understanding subsequent discussions with regard to the aims and scope of the project. The second part examines the influence of the World Wide Web on the hotel electronic distribution arena. As will be discussed, prior to the growth of the Web as a medium for information distribution and electronic commerce, the pace of change in relation to hotel electronic distribution was

relatively static, with a limited number of partners engaged in mutually supportive relationships over proprietary networks (HEDNA 1997). The Web appears to have acted as a catalyst – breaking the 'status quo' and encouraging both new developments and competition. As will be explained, this has lead to an explosion in the type, complexity and number of electronic distribution channels available, creating confusion in the marketplace. As a result, an ability to evaluate routes to the customer has become a competitive necessity. Therefore the final section examines the tools and techniques that have traditionally been used to evaluate and assess both information technology related projects in general and hotel electronic distribution channels in particular. This highlights how the techniques used in the past have become ineffective as a means of assessing the rapidly developing hotel electronic distribution arena. What were relatively simple distribution systems are evolving into complex networks, each branch of which has their own attributes and characteristics and thus many of the techniques identified in the literature have limited applicability. The chapter concludes by proposing that few effective methods for evaluating hotel electronic channels of distribution have been documented, thus highlighting the need for empirical research on the subject area.

2.2 Channels of Distribution

The manner in which companies bring their products to the marketplace is a cornerstone of any competitive strategy (WTO 1997). Porter and Millar (1985) specifically cite distribution as one of the primary activities of the firm and as one that is critical to its success. Effective distribution is especially important in the hotel sector, as accommodation is a perishable product. If a hotel room remains unsold on a particular night, it cannot be stored and subsequently offered to the customer at a later date. In

effect its sale is lost forever. Thus selling each room each night at the optimum price is critical to the overall profitability of the hotel (WTO 1991).

Channels of distribution are, by definition, "a set of independent organisations involved in the process of making a product or service available for use or consumption" (Lewis, Chambers et al. 1995). Middleton (1994) proposes that a "distribution channel is any organised and serviced system, created or utilised to provide convenient points of sale and / or access to consumers, away from the location of production and consumption, and paid for out of marketing budgets". They are "the critical link in the marketing mix between supply and demand, consumer and producer" (Mill and Morrison 1985). However some authors regard their scope to be broader than this as the above definition effectively ignores the promotional and market research activities undertaken by a channel while also underestimating their information provision function (Buhalis 2000). Most companies that produce goods or services need assistance in distributing their products to the end user. Where this is a physical good (such as, for example, a soft drink), arrangements must be made to get that product to where the customer can buy it. A distribution channel moves the good from the producer to the consumer, overcoming the major time, place and possession gaps that separate it from those who would use it. Usually, the producer uses a wholesaler or broker to assist in distribution, as the cost of developing their own distribution channels can be prohibitive and because the distributor can get closer to the customer (Dube and Renaghan 2000). Intermediaries tend to be more effective at making the product available to target markets. "Through their contacts, experience, specialisation and scale of operation, intermediaries normally offer more than a firm could do on its own" (Kotler, Bowen et al. 1996).

Hotel companies also need distribution systems to make their products available to customers. However, in contrast to physical products, with hotels the intermediary rarely takes possession of the product to be distributed. The concepts of product flow, ownership flow and title transfer are not always applicable where intangibles are being distributed. Although the consumer must come in contact with the firm to receive the service, there is often little tangible evidence of the transfer of ownership or title. Instead it is information – about availability, prices, qualities and convenience – that is transferred, communicated and manipulated (Poon 1993). While some analysts argue that the concept of a channel of distribution does not, as a result, apply to intangible products or services (Duke and Persia 1993), others feel that although there is no transfer of ownership or title, the concept is even more applicable than with physical products. As Middleton (1994) points out "the inability to create physical stocks of products adds to, rather than reduces, the importance of the distribution process. In marketing practice, creating and manipulating access for consumers is one of the principal ways to manage demand for highly perishable products". Contemporary distribution channels not only distribute tourism products, but also influence all the other elements of the marketing mix. For example, distribution channels often help determine the price by assessing real time demand and available supply, manipulate and formulate products by combining and tailoring products according to customers' needs and wishes, and finally facilitate promotion by targeting specific markets and establishing communication. (Buhalis 2000). Hence distribution decisions are critical for intangible products and services as they in effect influence the entire marketing mix. The choice of appropriate channels is key, as they influence branding and image as well as profitability. Rather than debate theoretical positions of whether intangible products or services should or should not be described as utilising channels of distribution, this

study accepts that the concept is appropriate and uses the terminology "channel of distribution" to describe the linkages between the supplier and the customer.

One of the purposes of distribution channels is to get the product from where it is produced to where the customer can buy it. However, in the case of a hotel room, the hotelier is both the seller and producer of the product simultaneously (Lewis, Chambers et al. 1995). The problem, therefore, is not how to get the product to the retailer (as in other industries), but how to get the customer to the hotel. The literature suggests that this occurs by making it as convenient as possible for the customer to find and book the hotel. For that reason, Go and Pine (1995) define a tourism channel of distribution as one that provides "*sufficient information to the right people at the right time and in the right place to allow a purchase decision to be made, and to provide a mechanism where the consumer can make a reservation and pay for the required product*". This viewpoint is supported by a variety of authors (e.g. Buhalis (2000), Middleton (1994), Bitner and Blooms (1982) and Connolly (1999)) who confirm that the purpose of a tourism distribution channel is to provide information for prospective tourists and intermediaries as well as to establish a mechanism which would enable consumers to make, confirm and pay for reservations. Hotel companies have traditionally used a variety of different channels to distribute their products and services (Kotler, Bowen et al. 1996). These include distributing through other properties within their chain (owned, managed or franchised), joining consortia or other types of affiliation organisation, hiring sales representatives or joining representative companies or reservation systems. In addition, most hotels make use of various intermediaries such as travel agents, tour operators or incentive houses (Marcussen 1998). In each case, the objectives are to

make information about the hotel conveniently available to the customer and to make it easier for them to book the property.

2.2.1 The Importance of Information

"A traveller without knowledge is a bird without wings"

(Sa'Di Gulistan 1258, quoted by Kotler in 1986)

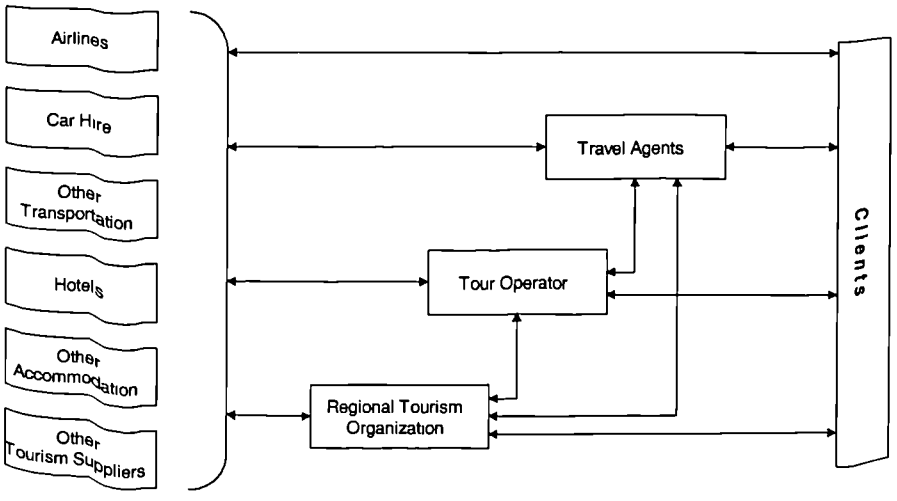
Information is acknowledged to be the "lifeblood" of tourism, as without the effective distribution of information, the potential customer's incentive and ability to book is severely limited (Wagner 1991). In few other economic activities are the generation, gathering, processing, application and communication of information as important for day-to-day operations (Poon 1993). Travellers need information before going on a trip to help them plan and choose between options, and also increasingly need information during the trip as the trend towards more independent travel increases (Vaughan, Jolley et al. 1999). This need for information is heightened by certain characteristics of the tourism product. Foremost among these is its intangibility - unlike manufactured goods, it cannot be inspected prior to purchase and therefore is almost completely dependent on representations and descriptions to help consumers make a purchase decision (Go and Pine 1995). It is also fixed geographically - thus the customer cannot pre-test the product and must travel - and, in effect, consume the product - in order to experience what they are buying (Bennett 1993). As a result, consumers are highly dependent upon representations to help gain an indirect sense of the product's intangible qualities and to differentiate among competing products (Poon 1994). Two other relevant characteristics are its complexity and its interdependence. Tourism products are

diverse, and in many cases it is this heterogeneity that makes them attractive in the first place. In addition, they are rarely bought in isolation, and "the endless combinations and permutations of alternative travel routes, transportation modes, time and lodging accommodation make travel decisions difficult even for the initiated" (Kaven 1994). Recent changes in society heighten the need for information. Leisure travel represents an emotional investment that cannot be easily replaced if something goes wrong (Pollock 1995). Time has become a scarce commodity, and, as a result, the annual holiday or even the weekend break is increasingly associated with risk. For consumers, planning even the simplest trip means trying to choose from a bewildering array of choices and options. And, as Buhalis (1997) points out "the greater the degree of perceived risk in a pre-purchase context, the greater the consumer propensity to seek information about the product". Consumers have thus begun to seek out as much information as possible in order to bridge the gap between their expectations and experience (Zsamboky 1998) and thus the fast, efficient exchange of information is essential for effective distribution, sales and customer service (O'Brien 1999). Suppliers therefore face a challenge, which Kaven has poetically described as trying "to gain identity with untold millions of potential customers covering the whole spectrum of incomes, interests, knowledge, sophistication and needs" (Kaven 1994).

Travellers can acquire information from a wide variety of sources, including directly from the hotel itself or through intermediaries as mentioned above. In fact, McIntosh goes so far as to define tourism distribution channels in terms of the various systems and intermediaries through which information flows, as "a system of linkages of various combinations of travel organisations through which a producer of travel products describes and confirms travel arrangements to the buyer" (Mill and Morrison 1985).

Intermediaries can take different forms. The *travel agent* acts as both a "search and book" service and as an advisor for the customer, relieving them of much of the burden of searching for suitable products and also using their knowledge and experience to help match customers with travel experiences (Palmer and McCole 2000). *Tour operators* act as consolidators, packaging different travel components together and marketing them as a single seamless product (Strategic Advisory Group 1997). Some *government tourism organisations* also act as intermediaries, distributing information and brochures for tourism suppliers in their region, while a variety of other organisations (such as, for example, clubs, credit card companies, incentive houses, and religious groups) have become involved in providing similar services, albeit in a minor way (Laws 1997). The primary role of each of these intermediaries is to facilitate the purchasing process, and information exchange is key to this function (Pollock 1995). Therefore, hotels must provide each one of these intermediaries with relevant information in an appropriate format to assist them in the sales process.

Figure 2.1 - The Conceptual Structure of the Tourism Industry



Information is thus the bond that holds the different participants in tourism distribution together (Poon 1994). Hotels have traditionally provided information to both the end consumer and the intermediary in the form of print-based media such as brochures or flyers, and through listings in local or regional guides. However, developing and distributing such promotional material is costly, time consuming and labour intensive. Limitations of space mean that difficult choices must be made as to images and copy, and the publication designed to appeal to the widest possible audience (Pollock 1995). In addition, information included in printed media is, by definition, static, while much of the data needed to make a booking (such as, for example, availability and rates) changes frequently. As was discussed earlier, hotel rooms are volatile in that if they are not sold on a given night, they represent lost revenue. Thus as their "use by date" approaches, their price thus tends to change frequently as hotels make adjustments in an attempt to manipulate demand and ensure that all rooms are sold (Middleton 1994). As a result, before making a booking, a potential consumer has to contact the hotel directly to insure that a room is available and to confirm the rate at which it is being sold (Bennett 1996). Therefore, accurate and timely information about availability and rates must be provided to both intermediaries and direct buyers at the right stage in the purchasing process for the selling process to be successfully completed (Strategic Advisory Group 1997). Thus the flow of information between the hotel and the customer is critical to the entire distribution process. In fact, some authors, most notably Poon (1994), maintain that information is so important that there is in effect a dual production system in tourism. While suppliers naturally have to provide products and services, for survival they must also produce and distribute information with respect to price, availability, quality, convenience and conditions of purchase of their services. In fact Poon claims that the provision and distribution of such information is as

important to the survival of the company as the actual provision of the products or services themselves.

However, simply making information available about the product is not sufficient – a mechanism must also be provided that allows the customer to make a purchase. (Castleberry, Hempell et al. 1998). This usually involves two phases; the negotiation of the terms and conditions of the transaction; and settlement, thus resulting in a contract between the two parties (Schmid 1994). The convenience of this latter phase (i.e. the ease with which the consumer can complete the transaction) is critical (Bennett 1993). According to Stern (1997), reducing the amount of time, energy and effort expended in acquiring goods and services has become as important, if not more so, as offering a reduction in price. This is particularly true where the sale is facilitated through an intermediary such as a travel agent, who has an interest in handling the most easily sold products and may well direct clients to competing operators if their product is more easily accessible (Bennett 1993). Traditionally the booking process involved the customer (or their agent) contacting the hotel directly, by mail telex, telephone or facsimile (Bennett 1996). This implies that traditional channels had to be used in pairs to successfully generate a reservation. Both an advertising medium (for example, brochures or guidebooks had to be used to disseminate information) and an interactive medium (such as, for example, a telesales agent or a travel agent) were needed to process the transaction (Kling 1994). Distributing the product took at least three steps, i.e. searching, contacting and finally booking, which was unsatisfactory from everyone's point of view. In hotels, large clerical squads were needed to sort mail, type letters, answer telephones and perform other administrative tasks, which resulted in high labour costs. Customers also experienced delays between requesting a reservation and

receiving confirmation. Therefore, to ensure that they actually received a room, they often requested rooms in several hotels, resulting in a high percentage of cancellations and no-shows (Anon 1968). Overall the process was ineffective and inefficient for all parties concerned.

2.2.2 The Role of Information and Communication Technology

As was discussed above, the exchange of information is very important at every stage in the sales cycle of the tourism product. Information must be able to flow between the client, any intermediaries involved and the supplier involved in servicing the client's needs. As a result, information technology (IT) - the amalgamation of computing, communications and electronics - has become an almost universal feature of the tourism industry (Bennett 1993). The power of IT allows information to be managed more effectively, and transported worldwide almost instantly (Frew and Pringle 1995). In contrast to static media such as print, IT based systems can more easily incorporate dynamic data such as room inventory, have no capacity limitations and a low marginal cost. In addition, they offer infinitely more reach, which has become increasingly important given the global nature of the hotel market. Poon (1993) summarises its benefits well when she cites "the possibility of reducing the cost of each transaction, reducing print and distribution costs, allowing for short notice changes, allowing one-to-one interaction with the customer and the potential to reach a broad audience". IT based systems also allow travellers to undertake reservations in a fraction of the time, cost and inconvenience required of traditional methods (Buhalis 1998), and has changed the way in which they both search for information and how they purchase travel goods and services (Connell and Reynolds 1999). Advances in communications technologies have "significantly increased people's awareness of travel opportunities, reduced the

cognitive distances to tourism destinations and created a modern mentality characterised by broader horizons, expanded spheres of influence and increased psychological mobility" (McLuhan 1969). Customers have become more sophisticated, want near instant access to price and product comparison information and routinely expect such information to be available electronically (Vaughan, Jolley et al. 1999). As a result, tourism organisations must change the way in which they conduct their business, and are under pressure to invest in new technology in order to maintain their competitiveness (Buhalis 1997).

Information technology has not affected all sectors of the tourism industry equally. Certain sectors, such as the airlines, have been keen adopters of technology, using it to help manage and streamline their operations and to gain strategic advantage (McGuffie 1994). Others, in particular the hotel sector, have been less enthusiastic (Gray, Matear et al. 2000). In the past, hoteliers viewed the nature of their business as being particularly hands on and as offering very personal service, and felt that the use of technology would be intrusive and jeopardise the personal element of the guest service experience (Weinstein 2000). Such a feeling was very strong among practitioners. In 1987, Wardell (1987) noted that the hotel sector was the most under-computerised segment of the international travel sector. Parker and O'Brien (1988), in their overview of the use of technology in the hospitality sector, focused practically exclusively on in house administrative and support systems, and made no mention of the role of technology in distribution. Furthermore, Gamble's 1984 textbook on hospitality computing was similarly internally focused, devoting less than one percent of its content to distribution issues (Gamble 1984). Even a major survey of technology use in the UK hotel sector carried out in 1992 made little mention of electronic distribution or

reservation systems (Hill Associates 1992)! It is only comparatively recently that such attitudes have started to change and that hotels have begun to take advantage of many of the benefits which technology can bring. According to Sigauw, Enz et al (2000), many hotels now use information technology to help refine customer service (Sweat and Hibbard 1999), improve operations (Bacheldor 1999), increase revenues and minimise costs (Huo 1998). Furthermore several studies have identified a positive and significant relationship between the use of IT and the development of a competitive advantage (e.g. Cho and Olsen (1998), Clemons (1986), McFarlan (1984), Porter and Millar (1985)). Given the benefits of IT touted in the literature, the extensive use of a technology within the lodging industry would appear to be a foregone conclusion. However many authors suggest that the hotel sector still significantly lags behind other industries in the implementation of IT ((Meyers 1999), (Woodyard 1999)). That being said, forecasts from the World Tourism Organisation predict that the hotel sector of the future with be increasingly characterised by effective product distribution, facilitated by information technology (WTO 1997).

2.2.3 Electronic Distribution

The application of information technology to distribution is a natural development of Porter's theory of competitive advantage. In their 1985 paper, Porter and Millar point out that activities within the value chain that represent a large proportion of overall costs need to be carefully scrutinised. Opportunities exist to use these to develop competitive advantage, particularly where they "have a significant information processing component or are critical to differentiation" (Porter and Millar 1985). As was discussed above, effective hotel distribution is both information intensive and critical for placement with both consumers and intermediaries. In addition, it represents

a relatively high proportion of overall costs – in some cases up to 25% of room revenue (O'Connor and Frew 1998). These costs have increased steadily in recent years, as franchise fees, reservation systems costs and travel agent / credit card commissions all contribute to the cost of communicating with and accessing the customer (Cline and Rach 1997). As a result, managing distribution costs has become a major concern among hospitality firms (Dev and Olsen 2000) and the application of information technology to distribution is a logical development.

As electronic distribution is a comparatively new and rapidly developing arena, a wide variety of imprecisely defined terminology is in use to describe the processes and systems involved. For example, confusion rules as to the differences between e-business, e-commerce and e-distribution – terms that are often used interchangeably. Some clarification is therefore necessary before proceeding further. Keen defines e-business as "the use of computers and telecommunications in the routine business transactions that most affect the basis of an organisation's operations; everyday relationships with suppliers, customers, banks, insurers, distributors and trading partners" (Keen and Ballance 1997). This view is supported by the findings of the International Hotel and Restaurant Association sponsored Think Tank on technology, which defined e-business as "an umbrella term that included e-commerce as a subset. E-business's primary focus is on the digitisation of every aspect of the company, including its business processes, its value chain, communications and information dissemination. It maintains an enterprise wide view of the firm and looks both inward and outward simultaneously for opportunities to apply IT to transform business processes and generate efficiencies, new sources of revenue or savings in the form of costs, materials and / or labour" (Connolly, Olsen et al. 2000). In contrast, the focus of

e-commerce is on the actual transaction in which goods or services change hands, and as such is a subset of e-business. Its goal is to achieve conversion, to win customers and capture new and incremental sales, and is either enabled or brokered using information technology (Connolly, Olsen et al. 2000). Kosiur (1997) suggests that to many "electronic commerce is defined as the buying and selling of products and services over the Internet". However, electronic commerce is wider than 'just' the Internet, and a broader definition, such as IBM's "e-commerce supports the entire selling process, from generating awareness, interest and desire through to the sale, service and support" is more appropriate (IBM 1999). This view is supported by many other sources, such as, for example, the Electronic Commerce Association, which defines electronic commerce simply as "doing business electronically" (Electronic Commerce Association 1997). Electronic distribution therefore is a further subset (initially of e-business and subsequently of e-commerce), encompassing those elements that facilitate the consumer selling process. In simple terms, this includes providing the customer with information and making it easy for the customer to purchase the product.

However the boundaries between these definitions are fuzzy, and the precise spot at which one stops and another begins is open to debate. Should settlement be excluded from the definition of e-distribution, as argued by Go and Pine (1995), or included as argued by Schmid (1994), Buhalis (2000) and Middleton (1994)? O'Brien (1999), referring to electronic commerce over the Web, distinguishes between distribution space and transaction space, with the latter being where orders, invoices and payments occur. The definition argument does not end at consumption, as some authors include post sale processes such as customer relationship management within the overall definition of electronic distribution, while others maintain that distribution finishes at the actual sale,

which in the case of the hotel product would be with the reservation. Clearly the dividing lines between e-business, e-commerce and e-distribution are blurred. As the literature seems to be unclear as to the boundaries, this is an issue that needs to be further clarified as part of the primary research.

2.2.4 The Origins of Hotel Electronic Distribution

According to Karcher (1995), electronic distribution systems in tourism began as inventory systems implemented by the airlines in the late 1950s and early 1960s. Originally developed as internal control systems, their scope was expanded to inter-organisational systems in the mid-1970s by installing terminals in travel agencies and the travel departments of large firms. This gave travel agents instant access to real time availability and pricing information, as well as the ability to make instant bookings, thus helping them to greatly improve the quality of service to their customers. The airlines also benefited from this arrangement, as it was less expensive to install the equipment needed to permit direct access than to hire additional staff to cope with growing levels of business. In addition, it quickly became apparent that travel agents were more likely to make bookings with airlines that supplied them with reservations equipment, a phenomenon that became known as the 'halo effect' (Burns 1995). This helped increase market share and aircraft load, as well as attracting incremental passenger revenues, and therefore changed the economies of operating such systems from one of simple cost reduction to one of more strategic importance (Copeland 1991).

Deregulation of the airline sector in the US in the late 1970s gave great impetus to the adoption of computerised reservation systems. In essence, deregulation triggered both the introduction of new airlines and more airlines competing on the same routes. This

combination of factors resulted in an exponential increase in the number of flight and fare options available, while at the same time producing significant difficulties for travel agents through increased competition and an absolute reduction in airfares. Therefore, the use of a computerised system became to a large extent essential to help untangle the complex web of information (Hitchins 1991). However, from the airline's perspective, developing and operating such systems was expensive, and there were simply not enough flight bookings being processed to provide sufficient return on investment. To counteract this, most systems began cross-selling related travel products along side airline flights (Knowles and Garland 1994). Such a development was timely, as, having grown comfortable with the process of booking flights online, travel agents also wanted to be able to source information about, and make bookings for, other travel products on their computer terminals. As a result, today's Global Distribution Systems (GDS), as the systems have become known, distribute a broad range of travel-related products, including scheduled and charter airline flights, hotels and other forms of accommodation, car rental, package holidays, ferry, rail and bus tickets, cruise packages, yachting, excursions, theatre tickets and even flowers and champagne. In effect, the GDS provide a near one-stop-shop for all a travel agent's information and reservations needs (Emmer, Tauck et al. 1993). Quite simply, if a tourism supplier wants their product to be sold by travel agents, it is practically essential that they are listed on a GDS (IHA 1995).

2.2.4.1 GDS and Hotel Accommodation

As was mentioned above, one of the first complementary products distributed through the GDS was hotel accommodation. Initially hotels loaded their various room types, descriptions and price categories into spare capacity on the GDS

database, thus making such information available to thousands of travel agents worldwide. Hotels benefited by having their product distributed to a wider audience, travel agents benefited by being able to book a wider range of products through their computer systems and the GDS benefited from transaction fees from the increased booking volumes, which helped offset their operating costs (O'Connor 1999). However the GDS were far from effective as a sales tool for the hotel product. A variety of problems arose as a result of the data architecture of the systems. As the latter were originally designed solely to distribute airline seats, their structure was designed specifically to store information about that product (Emmer, Tauck et al. 1993). In contrast to hotel rooms, airline seats are relatively homogeneous, and thus the databases did not have the capacity to be able to cope with the diversity of the hotel product. As a result, only a subgroup of the available room types and rates available in a particular property could be included on the system, and travel agents quickly found that they could often find more suitable products or more favourable prices by contacting the property directly (McGuffie 1994). The rigid database structure also limited the amount of data that could be stored about the product itself, meaning that the detailed descriptions necessary to sell hotels effectively could not be incorporated into the system. In many cases, simplified, abbreviated and truncated descriptions had to be used, frequently to the point where product differentiation and even clarity had to be sacrificed (Burns 1995). Hotels also experienced problems maintaining data on the system. Loading or modifying data was relatively technical, as each system used different protocols and syntax, and there was also a long lead time between changing data and it appearing live on travel agent terminals (Coyne and Burns 1996).

2.2.4.2 Hotel Central Reservation Systems

These three problems – limited number of rates, inadequate descriptions and unacceptable data update times – meant that travel agents were initially not confident in the information related to hotels provided by their computerised systems (Schultz 1994), and their effectiveness as a distribution channel (at that time) was questionable. Hotel companies thus began to doubt the value of loading their product on the GDS. As a reaction, most subsequently developed their own reservation systems, with database structures more appropriate to the hotel product, and linked them electronically to the GDS to permit access to the travel agent network. This overcame the data architecture problems discussed earlier whilst giving hotels electronic access to the travel agent market at a reasonable cost (Schmid 1995). In pursuing such developments, hotels were able to benefit from the experience gained by the airline companies (Schultz 1994). Following the same implementation philosophy, hotel reservation systems initially helped to manage inventory for the entire group at central telesales offices, and were subsequently forwardly integrated into the travel agencies through electronic connections with the GDS. However, as each serviced different geographical markets, hotels needed to be connected to each of them in order to gain maximum benefit. This involved developing multiple interfaces, which was both technical and expensive. For that reason, several of the major hotel companies cooperated to develop the concept of a "universal switch" (Werthner and Klein 1999). Such switches act as a bi-directional translator, connecting the hotel CRS to the numerous GDS platforms that exist at a comparatively low cost (Ader 2000). The use of a switch means that only a

single interface, between the hotel CRS and the switch itself, has to be created to give access to all of the major GDS systems (Archdale 1993).

Even though the development of universal switches has helped to reduce the cost of connecting a system to the GDS, the capital cost of both developing and maintaining a CRS is still substantial. As a result, many hotel companies out-source their electronic distribution instead of creating their own systems. According to HEDNA (1997), over one fifth of the major international hotel companies outsource some aspect of their reservations function to a third party. In some cases, both voice reservations and electronic distribution services are contracted, with costs normally being based on a per reservation fee, which allows the company to profit from the benefits of electronic distribution with a minimum of capital outlay. Such an approach is particularly attractive to smaller hotel groups and independents, which in many cases join consortia as a means of gaining cost effective access to electronic distribution channels (PriceWaterhouseCoopers 2000). Alternatively just the data processing component may be contracted. In such cases, the hotel chain operates its own voice reservation centres, using computer services owned and operated by an outside company. Fees are normally based on transaction volumes plus a fixed monthly fee, and again the hotel company has no capital costs and is freed from maintenance and upgrade costs (Burns 1995). The use of "Destination Management Systems" (DMS) could also be regarded as a similar strategy. DMS are generally state sponsored and are more diverse in their product offering than the GDS / CRS (Bender 1999). They distribute a wide variety of different tourism products and services, primarily focused on the leisure

customer, and, while they include hotel chains, they pay particular attention to distributing the offerings of smaller and independent tourism suppliers (Vlitos-Rowe 1992). However, with the exception of a small number of European countries, the impact of DMS has been minimal, and in the main they have failed to evolve into full commercial systems (Frew and O'Connor 1999). The disadvantage of each of these solutions is that a transaction cost has to be paid on each booking, which increases the variable cost of accepting a reservation through the channel. Furthermore, due to competitive pressures, many of these third party companies are evolving from simply providing reservations services towards providing a wider range of marketing and distribution services, with corresponding increases in the costs that they charge to hotels (Miller 2000).

Electronic distribution of the hotel product has on the whole proved successful. Enhancements to both the systems and increased use of electronic marketing have resulted in a consistent rise in the volume of hotel bookings processed over the GDS, as can be seen from Figure 2.2 (HEDNA 1998). Net hotel reservations delivered by the GDS totalled 48,787,000 bookings in 2000, and increase of over 5,000,000 bookings in comparison with 1999. Based on an average daily rate of US$ 130 and an average length of stay of 2.2 days, GDS bookings produced nearly US$14 billion in revenue for hotels worldwide in 2000 (HEDNA 2001).

Figure 2.2 – GDS Net Hotel Reservations 1993 - 2000

2.3 The Arrival of Internet Commerce

Until the early 1990s, the electronic channels of distribution that serviced the hotel industry were as described above – a cosy status quo where systems co-operated (rather than competed) with each other to facilitate distribution (see Figure 2.3). Relationships were effectively linear and each participant within the chain had a mutually beneficial role to play (Anderson Consulting 1998). The systems were in effect a closed user group, as the information they contained was distributed over proprietary networks and was not available to non-members (Wade 1998). Use of these distribution channels was lucrative, but was also expensive and lacked flexibility. Between 1993 and 1997, commissions and other reservation costs (measured on a per available room basis) grew from US$429 to US$930 – an increase of 117% in four years (Waller 1999). This growth in costs (taken together with a variety of developments in the external environment), convinced many hotels of the need to find alternative and cheaper ways to distribute their product (Dombey 1998).

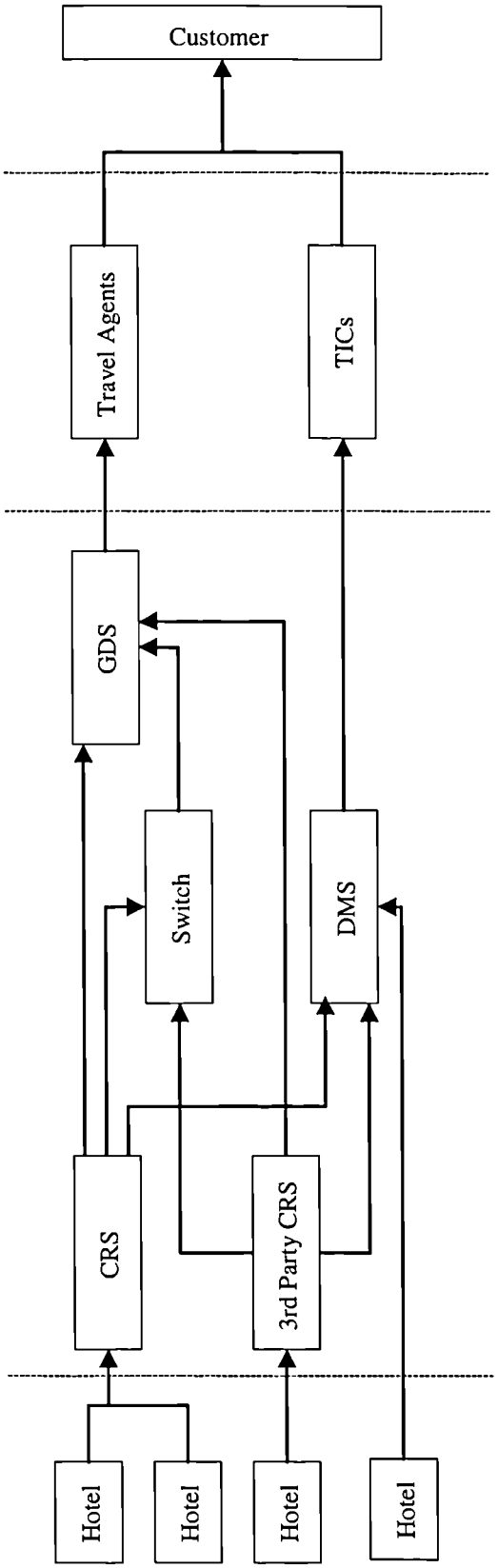


Figure 2.3 – The Proprietary Electronic Distribution Channels

In 1994, the acceptance of the Web as a mainstream communications medium provided just such an opportunity (Smith and Jenner 1998). Widely promoted as a medium for electronic commerce, opportunities on the Web have been quickly exploited by many tourism suppliers, in part because of the existing high level of computerisation in airlines and travel agencies (Web-Week 1997). Suppliers can achieve a lower booking cost by selling over the Web, as the distribution cost of voice calls and commission levels are eliminated (ByLine Research 1999). Furthermore the Web is thought to be a more effective selling medium than the text based GDS systems (Murphy, Forrest et al. 1996). In addition to providing description data and pricing, the Web allows images and short video clips to be delivered on demand. Today's more advanced websites allow customers to 'visit' hotel properties, take virtual tours and to book the room of their choice (Cline and Rach 1997). In addition, it facilitates direct access to customers with a high propensity to travel, presents little or no barriers to entry, and provides companies with substantial opportunities to communicate directly with their customers (Jeong and Lambert 1999). All of these advantages have prompted what Buhalis (2000) has described as " a radical change in the operation, distribution and structure of the tourism industry". The majority of tourism suppliers have begun distributing over the medium (Pusateri and Manno 1998) and it is having a profound effect on the way in which travel products are being marketed, distributed, sold and delivered (Williams and Palmer 1999). This is reflected in the findings of Jung (1999), who found that the majority of marketing and general managers in the chain hotels now regard the Internet as a "mainstream marketing medium", and consider that Internet marketing will become even more important over the next two years.

2.3.1 Confusion in the Marketplace

Perhaps the most significant effect on tourism of the development of the Internet as a mainstream technology is the shake up in distribution channels currently in progress. In addition to co-operating with each other as they did in the past, most actors in the tourism distribution value chain have started (or are starting) to compete with each other by creating their own websites with information provision and booking facilities (Coyne 1995). The situation is well summarised by Dombey (1998), who describes the situation as "little short of a technological stampede. Up and down the traditional distribution chain, ... providers are working feverishly to re-engineer their travel systems ... to bypass both the GDS and the travel agent to create a direct link with the customer". Each is trying to circumnavigate intermediaries lower down in the distribution chain and transact business directly with the customer (Jarvela, Loikkanen et al. 1999). As in the past, the airline sector seems to be leading the trend. For example, Stoltz (1998) points out that most airlines are encouraging their best customers to book online at their own websites. This is placing pressure on many of the "traditional" intermediaries, with as many as 20% of travel agents forecast to go out of business within three to four years (Reinders and Baker 1997). Similarly the Switch companies now address the customer directly, changing from being behind the GDS within the traditional arena to having direct communication over the Web. In essence, the level of mutual dependence between participants has decreased and each intermediary now has the potential (and frequently the facility) to distribute directly to the end consumer (HEDNA 1997).

Paradoxically, in addition to there being more competition between the distribution players, there is also more co-operation. Most on-line travel sites offer multiple

products (air, hotel, car, etc) from multiple vendors. Their key attraction with customers is that they are full-service and offer the ability to research and purchase an entire trip on-line (Ader, LaFleur et al. 1999). To do this, they need detailed content and access to reservation facilities, which they can only get by cooperating with other distribution providers (Wade and Raffour 2000). For example, the GDS, in addition to attempting to distribute directly to the consumer over the Web, are also servicing the reservation requirements of a variety of new players such as on-line travel agency websites and corporate booking sites (Dombey 1998). Non-exclusive virtual alliances are being formed, with companies combining to develop new synergistic relationships. An example of such alliances is demonstrated by Pegasus Systems. In addition to distributing its hotel products directly to the consumer through its TravelWeb product (www.travelweb.com). Pegasus also provides the information and hotel booking engine behind other Web based travel services such as Microsoft Expedia and Preview Travel – services that many would claim to be the company's competitors. However each partner benefits – Pegasus by leveraging its investment in developing and maintaining its hotel reservation system and its virtual partners by having access to an efficient and effective service without having to develop one for themselves. The coexistence of competition and co-operation has given rise to a phenomenon which Werthner and Klein (1999) have dubbed "coopetition"!

In addition, the Internet is creating just as many intermediaries as it displaces (Connolly 1999). Companies from outside what is normally regarded as the travel industry have identified the potential of Internet based travel distribution, have attacked and strongly positioned themselves in the distribution chain (Nealon 1998). These include publishers such as Lonely Planet, software developers such as Microsoft and media owners such as

CNN (HEDNA 1997). In general, such companies have positioned themselves as general-purpose travel retailers, providing a wide variety of travel information and booking services, usually in co-operation with existing intermediaries as was discussed above (Chervenak 1999). Coming from outside the industry, they have no pre-existing relationships, which permit them to position themselves advantageously. WorldRes, an Internet based hotel-booking service, is an interesting example. This is primarily focused on providing reservations facilities to member hotels, but has been able to expand rapidly by forming alliances with destination management organisations, other Internet based travel services, Internet portals and special interest / activity focused intermediaries (Chervenak 1999). Paradoxically, the very forces that are causing this growth in intermediaries may eventually cause their downfall. Since the lodging product is fairly homogeneous, many experts believe that it will become increasingly subject to commoditisation. As such, it is anticipated that price competition will intensify and that distribution system intermediaries will eventually be eliminated (Ader, Lafleur et al. 2000).

Individual hotel chains are also taking advantage of the opportunities presented by the Web. In a survey of the top fifty hotel companies carried out in 1999, over 90% of the hotel chains examined had a chain website, with nearly 80% of these providing reservation facilities to allow the customer to book directly (O'Connor and Horan 1999). For hotel companies, the advantages of setting up their own site are clear – lower distribution costs, increased sales as a result of specific promotions and increased customer loyalty (Wade 1998). Hotel chain sites appear to be highly effective, with the vast majority of Internet bookings (over 80%) flowing through these sites rather than through the Web intermediaries discussed above (HSMAI 1999). Furthermore, in

addition to being represented on their chain sites, many individual hotels have developed sites for their own properties. The attraction of Internet based channels is easy to understand. If they select the service(s) carefully, they have few up-front costs and no initiation or periodic fees. This gives them a risk-free supplemental source of confirmed reservations, allowing them to take advantage of free marketing opportunities (Chervenak 1999). Furthermore they can avoid GDS fees and, in certain cases, travel agent commission. For the 2000 to 2003 period, cumulative gross savings are estimated to reach US$1.3 billion, representing an annual saving equivalent to 1.7% of total industry profits in 2000 (Ader, Lafleur et al. 2000). Furthermore, little or no capital investment is required, and thus Web based systems make global distribution possible for many smaller establishments that could never have afforded to be included in the traditional GDS / CRS channel (Dombey 1998).

In short, the arrival of the Web has upset the distribution apple cart and prompted major change in the hotel distribution arena. Chervenak (1999) has described it as the "prime agent for change in central reservations". The Gartner Group (2000) claims that travel companies that fail to react appropriately to its potential have a 70% probability of being driven out of business in the next five years. Yet according to many industry analysts, hotel companies are barely at the threshold of using the tools made available to it by the Internet to communicate directly with their customers, cultivate loyalty and generate business (Ader, Lafleur et al. 2000). In addition to the rapidly expanding number of channels available, most are becoming interconnected, with each offering multiple routes to the customer. Which channel(s) are likely to dominate in the future? Most suppliers would ideally like to route all electronic distribution to the channels they directly control.

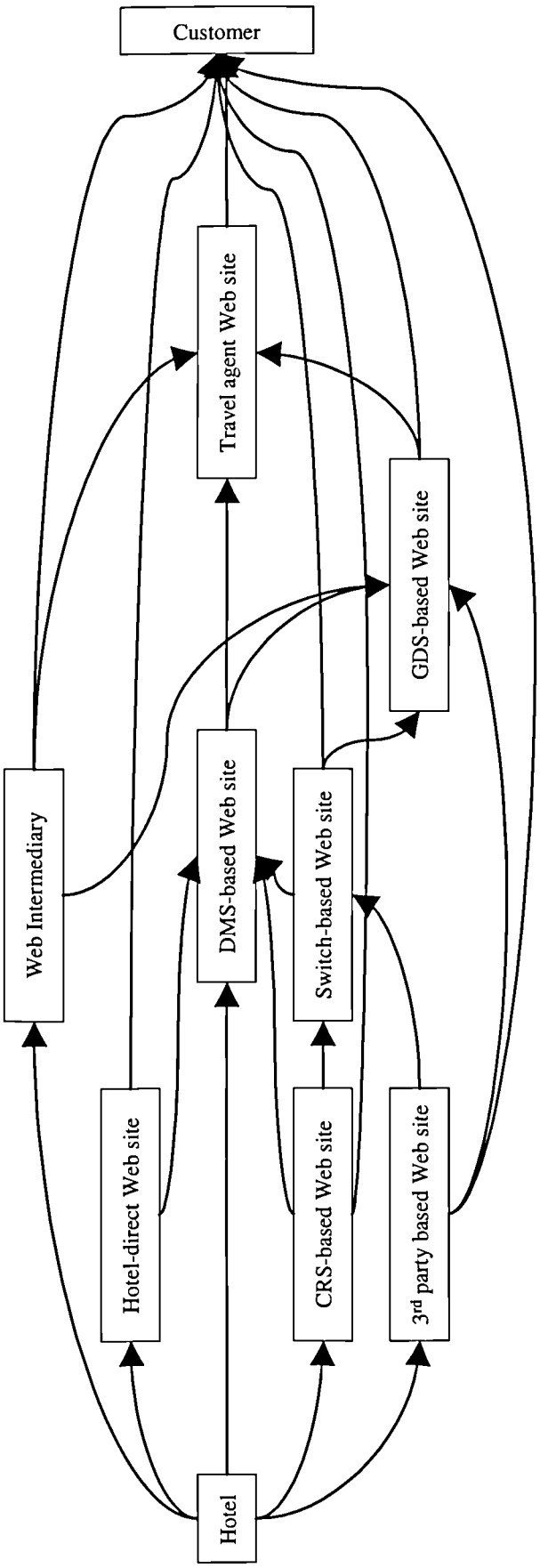


Figure 2.4 – A New Model of Hotel Electronic Distribution Channels

At the same time, most seem to realise that a viable third party distribution network will remain an integral part of the way in which their product gets sold for the foreseeable future (Ader, LaFleur et al. 1999). While less than 1% of hotel bookings were made over the Internet in 1998, PhoCusWright estimate that over 5% will be made over the medium in 2001, with the majority (51%) being made through third party sites rather than direct to the supplier (Ader, LaFleur et al. 1999). In all probability, it is likely that dissimilar distribution channels will be targeted at different market segments at different times (Buhalis 1998). Research among members of HEDNA (the Hospitality Electronic Distribution Network Association) shows that, in addition to the CRS / GDS route, over 98% of members utilise at least one other form of electronic distribution (HEDNA 1999). Multiple channels and strategies are likely to be required in the foreseeable future, as no one channel is likely to have enough distribution capability to place a product in front of all potential buyers (Ader, LaFleur et al. 1999). Thus hotels will need to use not just a single distribution channel, but a distribution "system" - a series of distribution channels that operate in parallel with, in competition with and in cooperating with each other. Clearly the industry could benefit from a complete and accurate "road map" of the various channels available. A range of ancillary questions also arises. Which channels are important now? Which are likely to dominate in the future? The situation is well summarised in the comments of one hotelier recently quoted in Hotels Magazine (Weinstein 2000).

> "I, as a hotelier, think that distribution is actually out of control now. Back in the old days, you had one or two options when it came to distribution, but now you have a huge array of faucets around your sink. For example, there are approximately 65

different sites that sell our product linked to just TravelWeb alone – all be it at the availability and rate that we put in the public domain".

Warren Markwart, Vice President,
Revenue Management,
Fairmont Hotels and Resorts

2.4 Evaluating Hotel Electronic Channels of Distribution

This above problem leads directly to the purpose of this study. Normal business principles do not change simply because technology is involved. As Crichton and Edgar (1995) point out, "not all distribution channels are of equal value or importance, and thus lodging companies must carefully weigh their investment decisions". Similarly, Connolly et al (2000) claim that selecting "an appropriate distribution channel is paramount to success and important if hotel firms are to grow top line revenues and control overhead, yet the number of choices facing hospitality executives is overwhelming". Likewise, in another publication, Connolly maintains that "the marketplace is getting too complex with its distribution channel offerings and too costly to serendipitously chose which channels to which to subscribe" (Connolly 1999).

Therefore, as with any other asset, investment in the use of a distribution channel must be justified (Griffin 1997). Each route to the customer must be assessed and evaluated as to its value to the company (Olsen and Zhoa 1997). In fact, Lewis claims that such channel management is the backbone of distribution and that every organisation must take the time to evaluate their current systems and organise a cohesive plan for improvements (Lewis, Chambers et al. 1995). Kotler et al argue that a well-managed distribution system makes the difference between being a market leader and struggling

for survival (Kotler, Bowen et al. 1996). Perhaps the situation is best summarised by Andersen Consulting, who maintain that hotel companies urgently "need to get better at managing their channels, understanding the profitability of each and developing levers to divert traffic through one channel or another. Success in the future will accrue to those who are able to best manage their channels as profit centres" (Anderson Consulting 1998). Hence arises the question of how to evaluate a channel of distribution.

While drawing up the proposal for this study, it was envisaged that each of the distribution players would be evaluated and the implications of their use assessed. However such a strategy was difficult to pursue because of problems in precisely defining each of the systems. How does one, for example, define what is understood by the term "GDS"? As was pointed out above, electronic distribution is a rapidly developing and highly competitive arena, and what was commonly understood to be a GDS in the past is now just a subset of interpretations today. This problem of definition is made more difficult because of the manner in which systems are evolving, merging and co-operating with each other. For example, how does one classify a system such as the aforementioned WorldRes.com? Is it one that provides private label reservation services to small and medium sized hotel chains (thus making it, according to commonly accepted definitions, a CRS), a generic reservation service for independents (thus making it a third party system), a destination focused information and reservation service for partner tourism associations (thus making it a DMS) or an intermediary on the Web (thus making it a Web based travel agent)? The answer is, of course, all of the above, which makes evaluation of such a system difficult if an organisational perspective is taken. In any case, adopting such an assessment philosophy would be

flawed. Examination of a typical series of distribution transactions reveals that most systems are used in combination with each other. A reservation may flow through three or four systems on its route between the customer and the supplier. For example, a reservation might flow through a travel agent, a GDS, and then a CRS before arriving at the property. The characteristics of this reservation are different from those that flows from a travel agent through a third party reservations supplier to a GDS to a CRS to the property, and once again different to those that flow from a travel agent through the Web directly to the property. Each of these sample transactions takes different routes from the end consumer to the supplier, and assessing the systems themselves would fail to identify such differences. It is moreover the routes, rather than the systems, that need to be the subject of evaluation. Such an approach would allow reservations with different characteristics to be effectively differentiated from each other, and thus developing an evaluation methodology based on this principle would help increase comprehension of this rapidly evolving arena.

Aside from the problem of accurately identifying and describing the systems that facilitate hotel electronic distribution, the question also arises as to how such a route should be evaluated? It is clear that the amount of funds invested in information technology related projects is very substantial. As a substantial number of information systems projects fail, effective evaluation, during the initial consideration, development and overall lifetime of a project, is increasingly seen as being important (Remenyi and Sherwood-Smith 1999). As a result, there is now considerable literature concerning evaluation techniques that can be traced from financial management, psychology and the social sciences, statistics and operations research, computer science as well as information systems. Perhaps the best starting point is an understanding of what exactly

is meant by evaluation. According to Ballantine and Stray (1999), evaluation is the process of establishing, by quantitative and / or qualitative means, the worth of an investment. Similarly Symons (1991) defines evaluation as "a process incorporating understanding, assessment and sometimes measurement of some sort against a set of criteria". Lastly Remenyi and Sherwood-Smith (1999) define evaluation as a conscious or an intuitive process whereby one weighs up the value added by a particular act / situation or determine the worth of an object. Although it can be intuitive, more formal evaluation techniques are more prevalent in the case of capital investments (Ballantine and Stray 1999).

Blackler & Brown (1988) suggest that there are four basic approaches to evaluation: cost substitution (the comparison of the financial costs of the old and the new systems), value added approach (a quantitative and qualitative comparison of the effects of the system on various aspects of the organisation's performance), organisational approaches (which focus on the impact on the structure of the organisation) and evaluation of the process by which systems are produced. Avison and Horton (1988), on the other hand, identify a large range of issues, including impact analysis, measures of effectiveness, economic approaches, user satisfaction, usability, technical factors and process evaluation as factors that can be used to evaluate information technology based systems in general. With the existence of so many evaluation approaches, it is no wonder that practitioners are unsure which method to use. In order to facilitate discussion, the following section places the approaches identified into categories, based on the major types of methodology that emerged from the literature. Naturally there is a degree of overlap between these approaches, as individual techniques can be relevant to more than one category. However, in this case, such overlap is unimportant as the objectives are

first to highlight the complexity of the evaluation process as it relates to information technology related projects, and second to bring some clarity to the range of techniques available.

2.4.1 Economic Approaches

The ever-increasing expenditure on information technologies has been accompanied by an increased demand to measure the value of the investment. The most commonly suggested techniques to achieve this are based on financial investment analysis techniques, and include cost benefit analysis, value added approaches, productivity based approaches and capital appraisal techniques.

2.4.1.1 Cost Benefit Analysis

According to Avison and Horton (1988), the most common technique used to evaluate information systems projects in general is cost-benefit analysis. This is defined by the Encyclopaedia of Accounting and Finance as "an analysis to determine whether the favourable results of an investment are sufficient to justify the cost of pursuing that alternative" (Shim and Siagel 1989). A system is considered to be justified if the benefits, along with avoided or reduced costs, outweigh the expenditure on the system during its lifetime, and the technique allow alternatives uses of resources to be compared. Thus, in fact, the technique attempts to decide whether the results of investing justify the expense involved (Svenningsen 1998).

However cost benefit analysis suffers from several limitations when applied to information technology related projects. In particular the costs and benefits

associated with such projects do not appear at comparable times. This may be due in part to the fact that IT investments are typically part of a string of interrelated investment decisions (some prior and some future) which are required in order for these investments to realise their full potential (Applegate, McFarlan et al. 1996). Furthermore, there are major difficulties in assessing the financial contribution of information technology based systems. According to a study conducted by Consumer Economics Report, nearly 75% of all IT investments have no easily calculated business value (O'Brien 1997). There are usually many unknowns, uncertainties, assumptions and future implications, which makes justifying such investments difficult. In particular user adoption, future benefits, hidden costs and competitive advantage are difficult to forecast (Clemons and Weber 1990) and thus cannot be included in the analysis. Furthermore benefits are highly dependent upon subjective judgements and their conversion into monetary terms is suspect, while costs are clearly and instantly expressed in monetary terms (Badenoch, Reid et al. 1994). Hubbard (1999) expresses the essence of the problem well:

> "Almost every variable in the cost-benefit analysis is uncertain. We don't know exactly what the initial costs will be or how much an improvement in productivity will yield. Yet typically in the analysis of IT investments, every cost or benefit is shown as a single, precise number. This implies that the exact number is known, which is almost never the case".

2.4.1.2 Value Added Approach

Because of the problems noted above with Cost Benefit Analysis, the value added approach has attracted interest. This is based on measuring the increase in management productivity as a result of the investment in technology. Management productivity is defined as the ratio of management's contribution to revenue to the cost of management. The basic assumption is that when the organisation's costs, including labour costs and the contribution of capital, are subtracted from its revenues, what remains represents the contribution of management (Sequeira 2000). Value added approaches treat the change in the level of management productivity as the contribution of the investment in information technology, thus avoiding the need to identify the effects of the system directly. Obviously, projects that add value to the firm should be accepted (Connolly 1999).

In practice, however, the process is much more complex due to the difficulty in defining and measuring value and also as a result of the difficulty in isolating and quantifying the contributions provided by technology. In any case, there is little evidence of added value from the use of computerised systems in general, and little published research that attributes improved levels of revenue, profitability or service standards to the use of technology (Bakos and Kemerer 1992). This lack of evidence may be caused by the difficult in separating the benefits of the investment from the effect of external factors (Gamble 1988). While the theoretical definition claims that the value of the investment is the difference between costs and revenues, in reality it is difficult to isolate such

concepts and thus the utility of this method as an evaluation methodology is limited (Symons and Walsham 1988).

2.4.1.3 Productivity Based Approaches

Increased productivity is often cited as a chief reason why businesses install technology (Talluri 2000). Productivity is defined as the ratio of output units to input units in a system. An organisation that produces more output units with fewer input units in considered more productive that a firm with a smaller ratio (Smith David, Grabski et al. 1996). However there is little empirical evidence that the concept of basing technology investments on increases in productivity is justified (Hitte and Brynjolfsson 1996). Today, IT ranks within the top three capital expense items for most companies (Weill 1991) and is falling victim to what Thorp (1998) term the "information paradox". Although most companies' investments in IT are growing annually, few can demonstrate that such spending is consistently leading to increased productivity (Connolly 1999). This trend can be observed across all industries. While service firms in general have invested substantially in technology, Federal Bureau of Labour statistics suggest that white-collar productivity has declined concurrently with the sector's efforts to automate. Furthermore each of the problems noted above in relation to quantifying the benefits from technology are again relevant in this case, and also there is often a time lag between installation and any resulting productivity benefits (Brynjolfsson 1993), making the methodology difficult to use in practice.

2.4.1.4 Capital Appraisal Approaches

According to Connolly (1999), the most suitable approach to technology investment evaluation is the capital budgeting process. This relies on traditional financial measures and the evaluation of cash flows based on the time value of money using discounted cash flow techniques (Bacon 1992). Traditional financial models involve estimating cash flows, the timing of these cash flows, the level of risk associated with a project, and the project's expected useful life. The basic techniques include Payback Period and Internal Rate of Return, while techniques such as Net Present Value and Discounted Cash Flow are generally accepted as being more powerful (Talluri 2000). The methodologies, advantages and limitations of each of these techniques are summarised in Table 2.1

However the application of capital budgeting theory to investments in IT is also problematic. First of all, there is an assumption that all cash flows can be predicted and that all contributions from IT (good or bad) can be quantified and expressed in monetary terms (Hubbard 1999). In other words, both costs and benefits are assumed to be well defined, direct and short-term (Hopwood 1993). However, as was discussed above, this is clearly not the case with technology investments (Serafeimidis and Smithson 1999). While tangibles are relatively easy to determine, it is more difficult to estimate the costs associated with infrastructure, human costs, opportunity cost and a variety of other factors and to differentiate those associated with the technology project in question from those being used to create competitive advantage, strategic positioning or enhance customer service.

Table 2.1 Capital Appraisal Based Evaluation Techniques

Method	Formula	Strengths	Weaknesses
Payback Period: Time period needed to recover initial investment expenditure; projects are accepted if their payback periods are deemed appropriate by guidelines established within the firm.	$C_o + \sum_{t-1}^{n} C_t = 0$ Where: C_o = Initial Investment C_t = Cash flow for time period t t= time period (year) n = duration (in years)	• Can be easily calculated and interpreted • Reflects the "real world" where technology costs decline over time and the technology itself quickly becomes obsolete	• Ignores the time value of money • Fails to account for cash flows after payback period • Encourages a short term, rapid return focus at the expense of long term benefits • Does not account for qualitative / intangible factors • Ignores risk
Average Rate of Return (ARR): Sometimes referred to as the accounting rate of return, this formula represents the ratio of an investments average net income after depreciation and taxes to the average annual investment; projects are accepted when the ratio is greater than / equal to company or industry averages.	$\frac{Average\ Annual\ Income}{Average\ Annual\ Investment}$	• Can be easily calculated and compared	• Ignores time value of money, giving too much weight to distant cash flows and insufficient weight to more immediate receipts • Focuses on accounting income, not cash flows, which are affected by how a firm treats • Does not account for qualitative / intangible factors • Ignores risk depreciation and which cash flows are defined as capital expenditures
Internal Rate of Return (IRR): Rate of discount at which a project's Net Present Value equals zero; projects are accepted when the calculated IRR is in excess of the opportunity cost of capital	$\frac{Payoff}{Investment} - 1$	• Widely used and recognised • Can easily compare rates	• Difficult to calculate for multi-year projects with multiple payoffs • May provide inaccurate rankings when comparing investments of different sizes or different timings of cash flows • Ignores qualitative / intangible factors
Net Present Value (NPV): Present value of the investment's money flows using a required rate of return or hurdle rate; projects are accepted when investments show a positive NPV.	$C_o + \sum_{t\ 1}^{n} \frac{C_t}{(1+r_t)^t}$ Where: C_o = Initial Investment C_t = Cash flow for time period t t= time period (year) r_t = interest rate for time period n = duration (in years)	• Theoretically superior method • Accounts for the time value of money • Allows comparisons of mutually exclusive projects and projects of unequal duration	• Difficult to comprehend and calculate • The risk adjusted discount rate can be difficult to determine • Does not account for qualitative / intangible factors

> Benefits can be even more difficult to quantify. And, even if appropriate data could be obtained, today's financial models are acknowledged not to be sufficient sophisticated to evaluate such investments (Semich 1994). Current techniques come out of the manufacturing economy, where the test of an investment's worth is based on "realised effectiveness and productivity gains, as realised *in terms of labour savings, increased output and lower unit costs*" (Connolly 1999). Thus they tend, to a large degree, to focus on cost displacement, to omit strategic implications, to be biased towards short term returns and to set unjustly high hurdle rates in situations involving high perceived risk, such as with technology investments (Clemons and Weber (1990), Weill (1991), Strategic Consulting Group (1992)).

Thus while financial techniques are objective and are theoretically well grounded, and are undoubtedly the most commonly used, their utility to evaluate information technology related projects is clearly limited as there are a variety of other factors that need to be taken into account (Ballantine and Stray 1999). Evaluating investments in information technology poses a number of problems that investing in traditional assets does not present (Lefley 1996). Chief among these is a change in focus from measuring hard and quantifiable dollar benefits that will appear on the firm's income statement to measuring indirect, diffuse, qualitative and contingent impacts that are difficult to quantify well (Banker, Kauffman et al. 1993). As a result, traditional financial measures are increasingly seen to be inadequate as evaluation methodologies for technology related projects (Leonard and Mercer 2000). However, despite their limitations, there is evidence that such techniques are widely used and sometimes misused (Connolly 1999). For example, research by Bacon (1992) suggests that

payback and IRR are more widely used that the theoretically superior Net Present Value when assessing technology investments.

2.4.2 Non-economic Approaches

While financial techniques clearly play a key role in the evaluation process, there is a growing feeling that traditional financial techniques no longer work adequately, particularly with information technology related projects. A recent survey of IS financial services companies found that most were not satisfied with such techniques. They believed there was too much emphasis on financial measures such as earnings and accounting returns and not enough emphasis on drivers of value such as customer and employee satisfaction, innovation and quality (Ittner and Larcker 2000). Another criticism is that financial techniques tend to be too narrowly focused. For example, it has been noted that many organisations record substantial improvements in performance immediately prior to the installation of new technology (Bessant and Haywood 1991). In most cases, these benefits are attributed to radical changes in business strategy and the organisation of work, prompted by senior management rethinking from first principles. In the long term, these "soft" benefits are probably far more powerful in terms of their impact on competitive position, but are to a large degree ignored by most financial evaluation techniques (Whitaker 1987). Furthermore, although the numbers used in financial evaluations are merely representations of an organisational reality, in many cases this notion is missed and the numbers are seen as an end in their own right (Remenyi and Sherwood-Smith 1999). In addition, because the analysis must by necessity be done *a priori*, such numbers are based on forecasted cash flows instead of actual or realised and thus are to a large extent fictional (Weill 1991). Clearly a more comprehensive or holistic

approach is needed. This has lead to a growth in the use of non-financial measures in the evaluation process.

Non-financial measures offer three clear advantages over measurement systems based on financial data. First of all, there is a closer link to long-term organisational strategies. Financial evaluation systems generally focus on annual or short-term performance against accounting yardsticks. They deal neither with progress relative to customer requirements or competitors, nor with other non-financial objectives that may be important in achieving profitability, competitive strength and longer-term strategic goals. In many cases, business and financial objectives can often be in conflict (Remenyi and Sherwood-Smith 1999). For example, in business in general, new product development or expanded organisational capabilities may be important strategic goals, but may hinder short-term accounting performance. Thus investments that help achieve these goals may be rejected if traditional financial investment appraisal techniques alone are used. By supplementing accounting measures with non-financial information about strategic performance and implementation of strategic plans, companies can communicate objectives and provide incentives for managers to address long-term strategy (Ittner and Larcker 2000). Second, critics of traditional measures argue that drivers of success in many industries are "intangible assets" such as intellectual capital and customer loyalty, rather than the hard assets shown on the balance sheet. Although it is difficult to quantify intangible assets in financial terms, non-financial data can provide indirect, quantitative indicators of a firm's intangible assets. Third, non-financial measures can be better indicators of a company's future financial performance. Even when the ultimate goal is maximising financial performance, current financial evaluation techniques do not capture long-

term benefits from decisions made now. Consider, for example, investments in research and development or customer satisfaction programs. Under normal accounting rules, both must be charged for in the period they are incurred, so reducing profits. But successful R&D improves future profits if it can be brought to the market (Ittner and Larcker 2000). Thus non-financial evaluation techniques have the potential to bring many benefits and enrich the evaluation process. While cost is clearly relevant, as can be seen from the above discussions, an evaluation methodology broader than one based solely on financial criteria alone is required. Some of the alternative techniques proposed in the literature are summarised below:

2.4.2.1 Strategy Based Approaches

A variety of authors agree that many forward thinking companies are increasingly looking to technology to build strategic or competitive advantage (see, for example, Cho and Olsen (1998), Clemons (1986), Domegan (1996) or McFarlan (1984)). As has been discussed above, technology is more than just a support tool, but has evolved into an asset that is essential for the survival of the firm. Without question, the requirements of today's marketplace have raised the level of technology investment required to compete successfully, making the implementation of information technology a strategic necessity (for survival) rather than a competitive advantage (Clemons and Weber 1990). Traditional models of competitive advantage are based on Porter's five forces model and the ability of the firm to either reduce its cost structure or differentiate its products and services. Competitive advantage results when a firm gains an advantage (typically in the form of an economic rent or increased market share) by exploiting its strengths relative to those of

its competitors (Ohmae 1992). In this context, competitive advantage from technology results when the technology itself helps the firm in achieving economies of scale, reducing costs, creating barriers to entry, building switching costs (binding the consumer), changing the basis of competition, adding customer value, altering the balance of power with suppliers, providing first mover effects, or generating new products (Applegate, McFarlan et al. 1996). Hopper (1990), however, suggests that these philosophies for gaining competitive advantage through information technology are becoming less valid. Instead the focus must shift and focus on how the information technology is used, rather than on the tools themselves (Strategic Consulting Group 1992). Competitive advantage has become a function of the ability to creatively exploit the capabilities of technology, not the technologies themselves since companies today essentially have the same information technology, applications and networking capabilities available to them (Zuboff 1988).

Thus, many companies now see the use of appropriate technology as a strategic positioning exercise rather than a financial one (Hensdill 1997). Evaluating such projects requires a management philosophy that goes beyond operations, and which assesses its role and importance to company success (Olsen 1993). In their research, Clemons and Weber (1990) found that "competitive advantage and strategic necessity confound traditional financial analyses and measures". These types of investment yield results over time rather than in the short run. Even if there is no apparent or immediate benefit, their role may be crucial to the firm's long-term success (Smith David,

Grabski et al. 1996). As a result, taking a more strategic viewpoint that balances the short and long-term benefits against the initial capital expenditure, ongoing costs and other factors, is needed. However, as technology becomes a strategic issue, the measurement difficulties discussed above are enhanced (Brady, Saren et al. 1999). "IT is a multidimensional object, its value can be looked at differently depending on the vantage point chosen" (Hitt and Brynjolfsson 1996). Thus, it is difficult to quantify and calculate the tangible benefits of technology when it is used for strategic purposes. To help overcome this, Sethi and King (1994) define a construct they call Competitive Advantage Provided by an Information Technology Application (CAPITA) as a way of assessing competitive advantage from an IT application. CAPITA is defined by five dimensions: efficiency (the extent to which an IT application allows a firm to produce products and services at prices lower than its competitors), functionality (the extent to which an IT application provides the functions and capabilities required by users), threat (the impact of an IT application on the balance of power between suppliers and buyers), pre-emptiveness (early adoption of an IT application to usurp the market) and synergy (the degree of integration between an IT application and the firm's goals, strategies and the environment). However even a casual analysis of this model shows that while it focuses attention on several important factors that should be considered, it does not overcome the subjectivity problem discussed above.

Apart from the work of Sethi and King, there is little published work on that addresses strategic information technology investment and evaluation

(Connolly 1999). The work that has been published is based on case studies and illustrates the complexities involved in justifying investments from a strategic perspective (Dewar and Hage 1978). In general, the studies demonstrate that the investment decisions are made in an ad-hoc manner and that the selection of evaluation approaches is also ad-hoc in nature. They basically conclude that the decision making process is generally an unstructured exercise with limited emphasis given to scientific models and methods, perhaps as a result of the lack of robust quantitative methods for IT/IS evaluation purposes. A further problem is there are no commonly accepted concepts to measure their proper value and no agreement as to which variables to measure (Olsen 1998). While this problem is not unique to the hotel industry, it is particularly relevant, as "the industry tends to be technologically conservative and unwilling to adopt new technology applications based on the promise of its long term merits if it cannot quantify the results" (Connolly 1999).

2.4.2.2 Marketing Approaches

Another alternative to the financial approaches detailed above is proposed by the marketing literature, which proposes technology investments in terms of their potential to service customers. However, in the case of distribution channels, simply choosing the channels with the largest potential audience is not the best solution, as a more targeted and focused approach may be more effective (Anderson Consulting 1998). When marketing professionals select media or places in which to advertise, they usually consider the medium and its target audience and compare them with the profiles of their customer base

(Connolly 1999). The same should be done when considering investing in technology. In relation to distribution channels, Connolly suggests that the hotelier should consider the reach of the channel, its visibility, the level of marketing provided by the channel operator and the services that front end the channel. The reach of the channel and the popularity of the database also cannot be ignored. If the database is front-ended by a number of services such as those found on the Internet, there is no need to join each service independently. Systems such as Expedia and TravelWeb provide access to numerous products and extend that access to numerous service providers. As these service providers promote their own Website, they indirectly promote the products they sell and thus increase the likelihood that customers will find a given hotel without that hotel incurring additional marketing costs for such publicity.

2.4.2.3 Technology Based Approaches

Obviously any information technology related project must be evaluated in terms of its technical feasibility. The organisation must process (or have the potential to acquire) the appropriate infrastructure, software and skills to be able to implement the project. As information technology investments tend to pervade an organisation (Clemons and Weber (1990), Weill (1991)), the effect of the investment on existing systems must also be considered, and issues such as performance, usability and reliability also need to be taken into account (Avison and Horton 1988).

> While a technological evaluation is undoubtedly important, frequently with such evaluations the technology becomes an end in itself. The business objectives of the investment – i.e. what organisational changes and improvements were to be achieved are often substantially (or even completely) lost sight of or ignored (Remenyi and Sherwood-Smith 1999). When a project is being considered, the originators, usually top management, have a vision, sometimes of increasing competitive advantage, enhanced customer service, greater effectiveness of an administrative process or some similar organisational objective. However, these objectives are very quickly translated into a limited number of financial objectives and into some technical objectives prescribed by the technical staff, often driven by the current technology trends. Consequently the project becomes technology driven and the benefit to the organisation in business terms is frequently lost. (Remenyi and Sherwood-Smith 1999). Clearly taking a technology focus approach alone is not appropriate as it ignores the financial, organisation and strategic issues.

As has been shown, evaluation is not a simple process in the context of information technology based systems. The above techniques are by no means the only ones suggested. For example, Serafeimidis (1999) claims that an organisational perspective is essential, and that the evaluation process should undertake a much richer examination of the organisational situation than has traditionally been the case. However, while there has been much debate in the literature over appropriate evaluation methodologies (Brady, Saren et al. 1999), only the various forms of cost-benefit analysis have gained wide spread acceptance among practitioners (Cronk and

Fitzgerald 1999). The reasons for this may be that both investment evaluation and information systems normally fall under the responsibility of financial managers (Burgess 2000), who, by necessity, use the techniques with which they are most familiar. Another possible driver may be that the time and cost of developing and using alternative techniques may be greater than the benefits that would be gained from such effort. A greater number of diverse performance measures frequently require significant investment in information systems to draw information from multiple and often incompatible databases (Ittner and Larcker 2000), as well as considerable effort selling the system to sceptical employees used to operating under existing rules. Furthermore, non-economic approaches also suffer from a variety of drawbacks. Primary among these is that, unlike accounting measures, non-financial data can be measured in many ways. As such, there is no common denominator and evaluating performance is difficult when some measures are denominated in time, some in quantities or percentages and some in arbitrary ways (Ittner and Larcker 2000).

Thus evaluation techniques have gone through an evolution over the past twenty years, which is well summarised by Cronk and Fitzgerald (1999). Early evaluation used only a financial perspective (Hamiliton and Chervany 1981). Later studies introduced the concept of technology's overall contribution to organisational performance (Bender 1986). These methods were also limited to a financial perspective, relating overall technology expenditure to organisational performance through such measures as Return on Investment and Return on Assets. The failure to consistently demonstrate a positive correlation between technology expenditure and organisational performance led to a recognition of the difficulty in isolating

technology's contribution from other organisational and external confounding factors. This recognition resulted in the development of "financial surrogates" including the more qualitative measures of user satisfaction and system goal fulfilment (Symons 1991). Dissatisfaction with the limited scope of these measures led to the development of multi-dimensional methodologies (Banker and Kauffman 1991). However, as yet, none of these methodologies are widely accepted by practitioners (McBride and Fidler 1994). This suggests that, despite extensive research, deficiencies still exist in the existing appraisal techniques. Collective wisdom now recommends a multi-dimensional methodology involving both qualitative and quantitative components (Banker, Kauffman et al. 1993). If a broad range of factors – not just the technical costs and monetary benefits - are taken into account, the evaluation process is more likely to truly reflect the real value of the system and to be valid (Avison and Horton 1988). In essence, these approaches recognise that there is no single best solution; instead a portfolio of techniques needs to be selected to suit specific applications and organisations. However such a contingency approach does not imply that the process should be *ad hoc*. While any assessment will obviously be influenced by the values, personal objectives and culture of those who make it, there is a need for a clear set of objective methodologies that can be used to evaluate information technology related projects.

The issue of the timing of evaluations also arises. Most of the techniques discussed above are used prior to the start of a project, in effect as feasibility studies to determine if a project is viable. Once it has been approved, ongoing evaluation generally does not occur with sufficient frequency or attention to detail (Remenyi and Sherwood-Smith 1999). However, seeing evaluation as a once-off exercise is short

sighted as without regular re-evaluations during its operational life, benefits can evaporate as the investment slips out of control. Evaluations should occur throughout the life cycle of the system, should be seen as normal practice and, as was discussed above, should include a broad range of factors, including social and organisational factors rather than concentrating purely on financial and technical areas (Avison and Horton 1988). This implies a need for a medium to long term continuous perspective and the use of evaluation as a continuous monitoring mechanism (Serafeimidis and Smithson 1999). However, as was described above, evaluating an investment in technology is difficult, even when its implementation has clearly been successful (Haywood 1990). Thus, in practice post implementation evaluation is usually neglected (Blackler and Brown 1988). Where they occur, such evaluations are usually exclusively financially based, and their primary motivation is usually project closure (Remenyi and Sherwood-Smith 1999).

2.4.3 Evaluating Electronic Channels of Distribution

While the above discussion highlighted current theory as to how information technology related projects in general should be evaluated, it did not specifically address the challenges of evaluating electronic channels of distribution. Obviously each of the points made above is clearly relevant in this situation, but the nature of electronic distribution channels presents some additional issues that must also be considered.

Primary among these is the unique difficulty in quantifying the benefits that arise from using a particular channel of distribution. One method suggested by the literature is to base evaluations on the volume of bookings that the channel generates.

However such an approach is problematic for several reasons. Firstly it may not in reality be possible to identify the precise number of bookings flowing through a particular channel. For example, because of technical limitations, in their reporting the GDS cannot differentiate between reservations originating in a travel agency and those originating through Web-based channels. Only one figure, representing all bookings for the property in question can be calculated. This effectively makes it impossible to differentiate between GDS based channels in the evaluation process. Furthermore, simply counting the number of bookings generated by a channel ignores the issue of the value of those booking, which can vary substantially, and also ignores those customers who use a channel as an information source but who book through an alternative route. As has already been pointed out, some channels suffer from a low "look-to-book" ratio (Hart, Doherty et al. 2000). While they are acknowledged to be important in influencing purchase decisions, they currently do not generate high volumes of reservations. For example, it has been noted that with the hotel product, a significant number of consumers use the Web to learn more about a hotel and to conduct comparison shopping, but currently make their reservation through other channels (Stoltz 1998). Similarly Connolly, Olsen and Moore (1998) report on a Nielsen study which found that while 53% of those surveyed use the Web to reach a purchase decision, only 15% of these completed the transaction online. Thus while a distribution channel may have high volumes of activity as the result of consumer inquires, it may have low conversion rates or actual bookings. In such a case, it is unclear as to which channel contributes to the booking decision. As a result, simply using the number of bookings generated by a channel, even if it could be accurately identified, would overlook these customers and thus underestimate the importance of the channel.

Alternative suggestions focus on evaluating a channel based on the amount of revenue that it generates. In addition to suffering from the limitations discussed above (i.e. a difficulty in attributing revenue to particular channels and not fully measuring the importance of a channel as its role as an information provider is ignored), such a methodology also ignores the issue of cost. Each route to the marketplace has different associated costs – both direct in the form of commissions and fees, and indirect costs associated with managing the channel (Lugli 1999). Given the developing inter-connectivity of channels, it can be difficult to precisely identify the cost of accepting a particular booking (Dev and Olsen 1998). For that reason, Cline (1999) suggests evaluating channels based on their effect on average room rate. This helps balance the volume issues against the cost issues, but is still problematic as the effect of any one channel is difficult to identify, and it is also difficult to see the effect in a short time frame. Multiple regression models could help to isolate this effect, but their requirements for historical data and complexity make them unsuitable for use by most hoteliers (McDonald 1996).

A variety of other complementary factors have also been identified as being important in choosing and evaluating electronic channels of distribution. For example, Connolly, Olsen and Moore (1998) cite "speed, reliability, accuracy, flexibility and functionality" in addition to the cost factors discussed above. Similarly, Kotler et al (1996) acknowledge flexibility to be of key importance. Flexibility refers to how easy it is to change the terms and condition of sale. For example, some third party reservation companies tie hotel chains into distribution agreements for extended periods of time, with heavy penalties if they terminate early (Kotler, Bowen et al. 1996). Kotler also focuses on the control issue. Control refers to how much influence

a supplier has over the manner is which the product is distributed. Can the supplier dictate the price or are their partners in the distribution chain free to discount or increase the price if they so wish? Morrison et al (1999) support these arguments by maintaining that loss of control and flexibility are effectively a cost of participation in a particular distribution channel as such conditions make these channels less attractive as a distribution medium. Both control and flexibility are often related to the length of the distribution chain (Lewis, Chambers et al. 1995). Shorter distribution chain (with fewer intermediaries) mean less commission and less need for co-ordination. The fewer the middlemen, the more profit and the less the potential for errors. Palmer and McCole (2000) support this view by pointing out that shorter distribution channels are needed as a product increases in perishability and complexity – both prime characteristics of the hotel product. Lastly reliability and accuracy are the two frequently cited factors in a study by Buhalis and Spada (2000) on what would influence SMEs to make use of a Destination Management System. Also cited was user-friendliness and easy of use, as well as the ability to distribute information widely and to be capable of increasing awareness and visitor levels. Future potential is also acknowledged as being a factor that needs to be taken into consideration (Horwath & Horwath 1994). Both technology and markets are constantly changing, and hotel chains must therefore constantly scan the environment for opportunities and evaluate how technology can help to service client needs (Olsen, Murthy et al. 1995). Thus when evaluating a distribution channel, its future as well as its current performance needs to be examined. For example, Carlson Hospitality Worldwide was the last of the major chains to develop an on-line computerised reservation system. The company chose to not follow the path chosen by many of its contemporaries, namely that of adapting the existing airline reservations systems, so that the most

prominent market of the time could be serviced. Instead Carlson chose to develop their own system from scratch, taking future potential markets into account and have been rewarded for their foresight by a reservation system that has been independently recognised as making the highest contribution to occupancy of its peers (Siguaw and Enz 1999).

2.4.4 Industry Practice

While the two previous sections have addressed how both information technology related projects in general and electronic distribution system in particular should be evaluated from a theoretical perspective, they have revealed little about what is actually happening in terms of industry practice. Do hotels current evaluate their electronic channels of distribution? If so, what techniques do they use to carry out such evaluations?

The literature is practically mute on this subject. Most sources (both general and hotel specific) cite the design and management of effective and efficient distribution channels as offering significant, frequently untapped, opportunities for firms to create unique, long term strategic advantage. Yet few sources offer concrete evidence as to how, or even if, hotel companies are evaluating the use of such channels. Traditionally the hotel sector has been poor at using formal techniques for information technology related investment appraisal. For example, the 1987 study by Whitaker (1987) revealed that less than half of hotel computer system installations were preceded by a formal systems analysis. In most cases, the decision process "consisted of a series of ad hoc and uncoordinated decisions based on vague intentions". Murphy et al (1996) found that "few businesses have based their Internet investment

on anything more than a back-of-the-envelope calculation – 18 percent have done no analysis at all, while only 12 percent have justified their investment under the scrutiny typically required within an organisation". Similarly, in relation to hotel websites, Jung and Butler (1999) found that 40% of respondents did not measure the success of their website in any way. Lastly, research by Cho (1996) with three prominent multinational hotel companies found that "cost benefit criteria consistently outweighed strategic perspectives when considering IT investment decisions". As was discussed earlier, such approaches tend to stem from a manufacturing environment where the test of a good investment is based on realised efficiencies and productivity gains, not from improvements in customer service, business processes and competitive positioning. While the role of industrial technologies is to produce high volumes of output with low unit costs, service technologies, while not quite the antithesis, are designed to provide exceedingly customised personal experiences. Yet despite these apparent and acknowledged differences, many hospitality organisations continue to require the use of industrialised concepts to evaluate and justify information technology projects (including distribution related ones), while failing to recognise their limitations and shortcomings (Connolly 1999).

There have been few published citations of distribution system evaluation in the hotel and tourism sector. Those that exist stress the need for such evaluations to occur, but offer few concrete suggestions as to how to perform them. Cline (1999) and many others point out that hotels have traditionally done a relatively poor job of monitoring distribution effectiveness. Pringle (1995) makes a pointed observation that use of electronic channels by hotels may not, in many case be due to a carefully thought out strategy, but to external pressure - a case of everyone else is doing it so why don't

we? Dev and Olsen (1998) points out that there is little evidence of active channel management or evaluation in the hotel sector. Everyone seems to be using every channel, and no one is prepared to make bold moves like those taken by the airlines to take control of their distribution strategy (Stoltz 1998). In a similar manner to hotels, airlines rank distribution costs as their third largest expense, after fuel and payroll, but also consider them to be the most controllable of the three. During 2000 many of the major airlines both re-launched their consumer focused Websites and announced commission caps to travel agents in an effort to strategically divert bookings towards cheaper channels. However, to date no hotel company has tested or implemented any similar action (Dev and Olsen 2000). This viewpoint is supported by Connolly (1999), who feels that this may be as a result of the fragile nature of hotel company's relationships with the travel agents community. Overly cautious about severing ties with travel agents, most companies continue to manage distribution channels tactically and not strategically. Today, most hotel companies treat distribution channels as analogous to shelf space in a grocery store. Under this type of thinking, more is better because it increases product visibility and the chances of customer selection. The reality, however, is that the costs and complexity to enter and maintain these channels can sometimes outweigh the benefits.

There are some suggestions as to how evaluations should occur. Moore (1977), Kirk (1996) and Olsen (1998) all suggest that a detailed cost benefit analysis is needed to justify investments in distribution channels. While a channel might be costly, it might also be extremely effective at informing and influencing the customer and thus its use can be justified. Another might be less costly, but might have little influence and thus would be a waste of resources. To that end, Lewis (1995) suggests combining the

revenue and cost factors to calculate the break-even point of the channel - by establishing the number of incremental rooms required to cover the additional commissions and costs. Dev and Olsen (1998) recommend "examining each channel's costs (direct and indirect) and benefits (tactical and strategic)". They say that companies should not just look at reducing travel agent commission, but must think about how they can get each channel to operate more effectively, how they can actually get more business and how they can ensure they can obtain the right kind of business from each channel. This is in effect a modified version of the cost benefit scenario discussed earlier – with all of its inherent limitations – but with its drawbacks amplified by the inclusion of tactical and strategic benefits and a range of "soft" objectives, which by their very nature are difficult to quantify and thus build into the analysis. In practice, Weinstein (2000) points out that there is some evidence that the major chains have started to evaluate their existing channels. "The consortium of chains that are getting together – the Accors and Starwoods of the world, are looking for a cheaper way to accept reservations from people who book them on their own Websites". Smith David et al (1996) found that all of the respondents to their limited survey considered the impact of technology on productivity prior to investment. However such consideration was very unstructured as a result of the difficulty in measuring productivity in relation to technology investments discussed earlier. In effect they found that investments often go ahead with any evidence that they will generate any improvements or productivity increase. The newness of electronic distribution is also a problem. Dev and Olsen (1998) specifically mention that further research is needed on how to justify investment in Internet related technology within the traditional ROI framework. According to Radosevich (1996), there is no good model currently available for valuing the Web based distribution due to the many

hidden costs and intangible benefits involved. She also cites Holiday Inn's inability to provide economic justification for its website, and shows how the justification had to be made based on long term strategic positioning rather than traditional economic cost benefit analysis as an example of the unsuitability of current techniques for the evaluation of hotel electronic channels of distribution.

2.5 Conclusion

This chapter has given an overview of the origins and development of electronic distribution as it affects the hotel sector. The importance of information distribution for the sale of the hotel product has been explored, and the role that information and communications technologies can play in making accurate, relevant and timely information available to consumers at the appropriate stage of their purchase decision making process has been explained. The importance of providing reservations facilities – to allow a consumer or an intermediary to book a room with minimum inconvenience has also been highlighted, and the range of channels traditionally available to help in this process have been described. It has been shown how the arrival of the World Wide Web as a commercial communications medium has acted as a catalyst in the hotel electronic distribution arena. In addition to cooperating with each other as they had done in the past, the majority of tourism suppliers have begun to distribute their product directly using consumer focused Websites. In addition, the level of interconnection between channels and systems has grown substantially, and both new systems and new connections continue to develop at a rapid pace. As a result, the hotel electronic distribution arena has become both complex and confused. Hoteliers are increasingly been presented with a vast range of potential channels

through which they have the potential to distribute their product. The question therefore is how to evaluate such choices.

The range of techniques traditionally used to evaluate information technology related projects was explored. This drew on literature published in many disciplines including finance, strategy, organisational theory, marketing, hospitality and information systems. Economic approaches, particularly those derived from financial management theory, are the most commonly cited in the literature. Suggestions include cost benefit analysis, value added approaches, productivity based approaches and capital appraisal techniques. However, the majority of these economic approaches are limited by the difficulty in precisely identifying the costs and benefits arising from the implementation of information technology related projects in general and electronic distribution projects in particular, and are in any case becoming less relevant as a result of the strategic importance of distribution channels to the success of hotels in the current competitive environment. Other authors focus on alternative evaluation methodologies. Most maintain that the design and management of effective and efficient distribution channels offers significant opportunities to create unique, long term strategic advantage, and therefore that the adoption or use of distribution channels should be evaluated from a strategic perspective. However, while most authors explain the theory of how to create competitive advantage, few offer concrete, easy to implement, suggestions as to how to use this theory to perform such evaluations, with the exception of using subjective judgement. A variety of other non-financial techniques, most notably basing evaluations on their relationship to marketing strategy or on their technical feasibility have also been examined. Thus it can be seen that attempting to evaluate hotel electronic channels of distribution is

both complex and multifaceted. There is little agreement as to how such evaluations should be carried out, and no commonly accepted range of techniques available to help hoteliers with their channel evaluation and assessment decisions. As a result, new business measures that "effectively represent digital commerce, determining the health and profitability of each channel available are needed" (Castleberry, Hempell et al. 1998). This places the purpose of this study in perspective. As can be seen from the discussion, literature regarding how electronic distribution channels of distribution should be evaluated is still in its infancy and lacks robust knowledge as to the process that should be followed and the criteria that should be used. With the capital, organisational and technical requirements to successfully use an electronic channel increasing, evaluating such decisions has become of critical concern to industry practitioners. To this end, this study will help hoteliers to evaluate potential channels for use in their particular property by developing an evaluation model to aid in the decision making process. As existing literature has proved inconclusive, the data necessary to develop this model will be collected in two ways – using an expert group to establish a baseline list of evaluation criteria, and by validating this list among practitioners in the hospitality sector. The methodology used to collect this data is discussed in Chapter Three, and the findings of both primary research studies are presented in Chapters Four and Five respectively.

Chapter Three

Chapter Three – Research Methodology

Chapters One and Two presented an overview of this study by defining the context of and necessity for developing a framework to help evaluate hotel electronic channels of distribution. The review of the literature presented in Chapter Two failed to identify a range of generally accepted techniques that might be used to evaluate such channels. In addition, informal discussions with distribution service providers, academics and hoteliers similarly failed to reveal any consensus. Given the demonstrated importance of electronic distribution and the growing level of booking volumes, appropriate evaluation tools or techniques would clearly be of benefit. As such approaches have not been empirically identified in the past, a study that established the range of tools and techniques applicable would significantly contribute to the pool of knowledge in this subject area. A further but related question also arises – are hotels currently evaluating their electronic channels? And if so, how? As was discussed in Chapter Two, little evidence could be found to indicate that such evaluations either are or are not occurring. Thus once again a knowledge gap exists that could be filled using empirical research techniques.

This chapter describes the research techniques used to address the above questions. In addition to the review of the literature available on electronic distribution in the hotel sector presented in Chapter Two, two linked primary research studies were used to explore this issue. Qualitative research, specifically a Delphi study using subject area experts, was used to develop a typology of the channels available, to forecast the future potential of each for the industry as a whole and to develop a list of the techniques that should be used to evaluate hotel electronic channels of distribution.

This was followed by a survey of industry practitioners to validate the findings of the expert panel, to establish the industry viewpoint as to the current status and future potential of hotel electronic distribution channels, and to determine the acceptability of the range of evaluation factors identified to industry practitioners. The use of multiple research techniques allowed the findings to be triangulated and helped develop more robust findings than could be achieved otherwise. Each phase of the research study is described separately below.

3.1 Aims and Objectives

The two issues identified above form the core of this research study. In short, the study sets out to identify what evaluation / assessment tools are currently available and being used by the industry to help choose between electronic channels of distribution, and what methods should be used in the future as a result of the change in the nature of hotel distribution channels discussed in Chapter Two. From these aims, five specific objectives can be identified. Specifically these are:

- **"To develop an appreciation of the current hotel electronic distribution environment"**. As has been highlighted, both the number and complexity of electronic distribution channels available is growing, but no comprehensive roadmap of either the systems that facilitate distribution or the routes to the customers is currently available. To overcome this problem, the study will create a typology of the hotel electronic distribution arena to help clarify the setting of the study. This will help increase understanding of the electronic distribution arena, how it works, its strategic value and also act as a foundation on which subsequent research can be built.

- **"To establish the level of reservations generated by each of the electronic distribution channels currently being used by the major hotel chains worldwide, and to forecast their future potential".** While a wide range of channels may be available, clearly certain ones are more important than others. In addition, the arena is currently in a state of transition. While particular channels may currently dominate, their future is uncertain. The study will establish the current and potential relative importance of the channels identified to help industry practitioners to focus on those with the most potential.
- **"To establish an understanding of the techniques currently being used to evaluate electronic distribution channels in the hotel sector".** Adopting an electronic distribution channel is a major strategic decision, requiring capital resources as well as management effort. Not all channels can be adopted and thus both the channels currently being used and any potential additions need to be evaluated to identify those that best match the needs of the organisation. How are such evaluations carried out? As was discussed in Chapter Two, there is little agreement as to how information technology related projects in general, and distribution projects in particular, should be evaluated. What decision factors should be considered and which are most important? What are the advantages and limitations of current techniques? The study will critically evaluate the range of techniques suggested and attempt to identify those most suitable for use in this evaluation process.
- **"To measure the usage of such techniques among hotel chains".** While a variety of factors might be proposed as evaluation techniques for hotel electronic channels of distribution, the question must be asked as to the usage

of these techniques among industry practitioners. The study therefore will measure the use of evaluation techniques in relation to hotel electronic channels of distribution by the major hotel companies, and furthermore assess the acceptability of the range of techniques identified in this study to industry practitioners.

- **"To propose additional techniques that could be used to evaluate hotel electronic channels of distribution".** Based on the exploration of range of evaluation techniques identified, and the findings of the industry research, an optimal portfolio of evaluation criteria for hotel electronic channel of distribution evaluation will be proposed. This will be developed into a computerised model to help industry practitioners to easily make practical use of the knowledge gained in this research study.

3.2 Quantitative Versus Qualitative Studies

There is great debate regarding the relative contribution of quantitative and qualitative research (Babbie 1995). Many traditional scientists argue that a quantitative approach to research is superior to a qualitative one because the use of inferential and descriptive statistics, experimental design and surveys are perceived to provide more scientific rigour and objectivity and therefore support actual theory testing. The results produced are said to have greater validity, are more capable of being generalised and replicated, and hence provide greater theoretical contributions. In addition, with qualitative research, the data typically comes in the form of words, not numbers, and the evaluation of qualitative data tends to be more subjective than for quantitative studies because the researcher has to attempt to establish themes, patterns and categories from the data based on his understanding and interpretations.

However qualitative research is thought to be more aptly applied in situations involving theory building (Sutton and Staw 1995). With qualitative research, the aim is generally to explain or describe a pattern of relationships (Huberman and Miles 1994). According to Connolly (1999), qualitative research's use of multiple methods, perspectives and participants in a single study enables the researcher to develop rigour and richness. The resulting product provides a more holistic view and understanding of the phenomenon at hand (Morse 1994). In addition, it has been noted that precise quantitative approaches often miss other relevant variables or lines of inquiry, inadvertently strip meaning from the context in which the observations were taken and occasionally create a poor fit between hypothesis and the study's sample (Guba and Lincoln 1994). Qualitative methods, on the other hand, allow the researcher to explore the intricate details of the phenomenon (Strauss and Corbin 1990). As a result, there are convincing arguments that qualitative research methods are appropriate and, at times, more effective when attempting to study and explain a given phenomenon.

It's clear that neither type of research is superior to the other. The appropriateness and fit depends on the research questions, problem statement and context. The research method(s) must be chosen based on the research problem and context, not on any apparent ease of use or perceived workload required by the technique(s) selected. In other words, the methodological choice follows the research question and problem context, not vice versa. Regarding research on IT, Myers (1997) writes "As the focus of information systems shifts from technological to managerial and operational issues, qualitative research methods become increasingly useful". Yin (1994) suggests that

when research questions focus on exploratory issues like how, when or explanatory questions, and when the research focuses on a contemporary problem as opposed to one of a historical nature, qualitative research is more appropriate. As this study focuses on the management of an information technology based resource, is exploratory and contemporary, a qualitative approach is therefore appropriate.

That being said, qualitative and quantitative research methods can coexist and even complement one another. In general, qualitative methods are better suited for descriptive and exploratory studies and help build an understanding and develop an initial theoretical foundation for a given phenomenon of interest. As the knowledge base pertaining to a particular phenomenon grows from exploratory and descriptive research, the research process will mature, enabling more empirical quantification and hypothesis testing that leads to the establishment of causal relationships and explanatory studies. To this end, the qualitative approach used in the initial stages of the study is followed by and supported by a quantitative survey to measure the fit between those suggested by the qualitative survey and actual practice in / acceptability to the hotel industry. Such triangulation techniques should help ensure that the overall theory developed is stronger and more robust than it would be if only a single approach was used (Sutton and Staw 1995). Such an approach also allows the comparison of theory versus practice, thus helping to enrich the usefulness of the findings of the study as a whole.

3.3 Research Design

All scientific research begins with a question of interest (Janesink 1994). According to Kerlinger (1986), the research design represents and articulates the researcher's

plan and the structure of the investigation that will be followed when seeking answers to the research question(s) posed. Its role is to provide answers to the research questions and to control variance (Kerlinger 1986). Simply stated, the research design serves as a blueprint that outlines the overall research programme and guides the investigator in collecting, analysing and interpreting observations (Connolly 1999).

Effective research must balance relevance with rigor (Benbasat and Zmud 1999). To obtain valid and meaningful results, it is critical to employ and appropriately implement the most suitable research techniques(s) for the topic of study. In this case, the research project was broken into three distinct stages;

- The first stage involved establishing the range and scope of electronic distribution channels currently being used in the hotel sector, and determining how such channels should be assessed by the industry. This was achieved initially through a literature review and a tentative, conceptual working model was presented in Chapter Two. It was shown that the number and variety of electronic distribution channels is greatly increasing, and that appropriate methods of evaluating such channels would clearly be of use. However it also revealed that there are few commonly accepted or even suggested techniques available to carry out such assessments, and that the usage of such techniques by the hotel industry is largely un-researched.
- The second stage focused on identifying and prioritising a range of techniques that might be used to evaluate and assess hotel electronic channels of distribution, both at the time of their initial consideration and when their

ongoing use is being considered. As was mentioned above, an acceptable range of techniques could not be identified from the literature, and thus primary research was necessary. A Delphi study was carried out to establish an initial list of appropriate factors to be considered, and the results of this study are presented in Chapter Four.

- In the final stage, industry practitioners were surveyed to establish what techniques are currently being used to evaluate hotel electronic channels of distribution and to gauge their acceptance of the techniques proposed. The factors identified in the Delphi study were presented to a sample frame composed of the managers responsible for electronic distribution in the top 200 hotel brands worldwide. Managers were asked to indicate the appropriateness of each technique for use in the industry, as well as to suggest addition ways in which such channels might be evaluated. The findings of this survey are presented in Chapter Five, along with a comparison of the views of the expert group used in stage two with those of the industry practitioners.

3.3.1 Stage One - Literature Review

An extensive and comprehensive literature review is important in that it gives the researcher an important perspective as to how existing ideas on the subject area have developed, which have been abandoned for lack of support and which have been confirmed as being true (Salkind 2000). According to Connolly (1999), the purpose of a literature review is to create awareness, understanding and appreciation for the work that has preceded the current study. It expresses the current state of knowledge as it pertains to the research topic, and helps shed light on the problem at hand, giving

valuable insight on how best to study it and what the limitations might be encountered.

Of primary importance in the literature review is the literature search. This "involves a systematic and methodical search of published sources of information to identify information relevant to a particular need" (Caspers 1997). Such sources may take many forms, including books, journal articles, conference papers, reports, thesis and various forms of electronic resources such as mailing list archives or World Wide Web pages. The literature search in this study can be divided into formal and less formal searching. Less formal methods included the collection of material as a result of the author's involvement in teaching and writing on subjects related to hotel electronic distribution (see, for example, O'Connor (1999), O'Connor and Horan (1999), O'Connor (2000)). Obviously such a strategy is not academically rigorous, but did expose a large variety of relevant and pertinent published material. However the main search was carried out in a more systematic fashion. A set of keywords was developed under which searches were likely to yield relevant information. The initial keywords were developed based on prior readings, conference presentations and a brainstorming session with colleagues and included 'distribution', 'electronic distribution', 'electronic commerce', 'e-commerce', 'evaluation techniques', 'assessment', 'channel management', 'hotel industry', 'tourism' as well as more specific terms such as "GDS" and 'hotel Internet marketing'. These keywords determined the scope and range of the searches, with the time-scale being set to the beginning of the 1990s. Naturally the keywords were further developed and refined depending on the results of the search on each database. Formal searches were carried out on the following intelligence sources:

- Library catalogues at Ecole Superieure des Science Economique Commerciale, Dublin Institute of Technology, Napier University and Trinity College, Dublin. The latter is a British Library holding library and therefore is required to stock all books published in the English language.
- Online indexing, abstracting and bibliographies including ABI / Inform, Proquest, Chris (Consortium of Hospitality Research Information Services) FirstSearch, Helecon and Whatt (Worldwide Hospitality and Tourism Trends).
- Internet based sources. These included electronic newsletters (such as www.jup.com from Jupiter Communications and Hotel Interactive Daily News from HotelInteractive.com), online discussion group archives (such as InfoTech-Travel and Elmar-AMA), commercial online intelligence services (such as Gartner Group and Forrester Research) as well as traditional search engines. However the use of the latter with the keywords identified above proved relatively ineffective, mostly yielding the pages of commercial organisations advertising their products or services rather than original empirical data.

As was discussed in Chapter Two, analysis of the data collected in the literature search showed that many different electronic distribution channels are currently being used in hotels. The review also demonstrated how the growth in the commercial use of the Internet, and in particular the World Wide Web, has acted as a catalyst on the sector, prompting a growth in the number and diversity of the systems and options available to hoteliers to distribute their product over electronic media. However, the quantity and quality of literature within the hospitality technology field was very limited. This mirrors the findings of earlier studies in related fields (for example

(Connolly 1999)), which encountered similar problems. While a large number of publications exist on hospitality technology, these tend to focus on describing systems rather than on their operational or management implications for industry practitioners (IFITT 1999). Authors have called for greater attention and research on the subject of hotel electronic distribution (Stern and Weitz 1997), but, with the exception of the Connolly study cited earlier, little has been published that builds substantially on the understanding of the topic since the publications of Emmer et al (1993) and Schultz (1994). In addition, much of what has been published is descriptive in nature, concentrating on explaining how systems work or technologies have been applied rather than developing a conceptual framework to help understand the subject. A typical example is Emmer et al (1993), which provides a comprehensive overview of the origins of hotel electronic distribution systems, but which fails to address how to evaluate the adoption or use of such systems. Overall the search identified few relevant publications on the research topic, and more importantly, failed to reveal substantial evidence that electronic channels are currently being evaluated, or that appropriate evaluation techniques exist to perform such a task. As such, there is little by way of *a priori* theoretical research available to help answer the research questions. Therefore there is a shortage of formal knowledge available on the research topic, thus further justifying the relevance and contemporary nature of the study.

3.3.2 Stage Two – Delphi Study

As was discussed above, literature on hotel electronic distribution is mainly descriptive and focuses more on describing the systems available and their development than on how such systems should be evaluated. In fact, as can be seen

from the discussion in Chapter Two, there is little agreement as to how such evaluations might be carried out, or even as to whether they should be carried out in the first place. To fill this knowledge gap, primary research was necessary to develop a list of the techniques that might be suitable for such a purpose.

Given the lack of previous research, the use of an inductive or "grounded theory" approach was necessary to explore the range of channels available. An argument in favour of this approach is that it prevents the study being constrained by restrictive theoretical propositions – a factor that is particularly important where the study is exploratory, of a contemporary nature or based on a highly volatile environment (Bryman 1988), all factors that are highly relevant in this case. The inductive approach does not set out to prove or disprove an existing theory but rather to assist in the construction of new knowledge about a subject area. In contrast to the deductive approach, it does not use existing theory to shape the research process and subsequent data analysis. Instead it starts the data collection process and then explores what theories or issues to follow up to build a theory or explanation for a phenomenon. Data is analysed as it is collected, and a conceptual framework is developed to guide subsequent work (Connell and Reynolds 1999). This approach referred to as a "grounded" approach as the nature of the theory or explanation that emerges is one that is *grounded in reality*.

The arguments in favour of the inductive approach are that there is little danger of introducing a premature closure, as is the case where the research and analysis are based on an existing theoretical or descriptive framework. In addition, it prevents the study being constrained by restrictive theoretical propositions – a factor that is

particularly important where the study is exploratory, of a contemporary nature or based on a highly volatile environment. Studies that use an inductive approach tend to generate findings that are characterised by quality and depth of evidence rather than coverage. And lastly, the use of a grounded theory approach provides a good fit between the social reality of the research participants and the theory that emerges, allowing it to be more easily understood and appreciated by those who participate in the study (Bryman 1988). The major limitation is that, due to the unfocused and unstructured nature of the approach, the researcher must have a very clearly defined purpose before commencing. Since in this case, the objective was to establish and prioritise a typology of the possible evaluation methods that could be used to assess hotel electronic channels of distribution, the purpose was considered to be tightly defined and thus an inductive approach was considered suitable for use as a research philosophy in this case. At the same time, when using a grounded theory approach, it is essential that the researcher approaches the inquiry with a reasonably open mind as to the kind of general thesis that will emerge from the research (Stake 1994). Of course, preconceptions cannot be entirely avoided but, where possible, they should be minimised (Lubbe and Remenyi 1999).

A range of alternative qualitative and inductive research techniques was considered for use in this research study. These included surveying industry practitioners, holding focus groups with industry practitioners and / or system suppliers or undertaking interviews with subject experts to establish how hotel electronic distribution channels were being and should be evaluated. However, after due consideration of the alternatives, the Delphi technique was chosen as the appropriate methodology for the reasons discussed below.

3.3.2.1 The Delphi Technique

> "Delphi is a method to systematically solicit, collect, evaluate and tabulate independent opinion without group discussion. The control of interaction among respondents is a deliberate attempt to avoid the disadvantages of the more conventional use of experts via round table discussions, committees and conferences. There is usually a greater flow of ideas, fuller participation and increased evidence of problem solving"
>
> (Tersine and Riggs 1976)

According to Pan et al (1995), "the aim of the Delphi technique is to reach a group opinion about a particular subject in a manner which enables each individual participant to reach a personal decision without being influenced by the rhetoric or personalities of the others taking part". Primary among the decision factors was that research about complex problems and future developments is best studied through methods using expert opinions (Welters 1989). Few hoteliers have sufficient knowledge to speak authoritatively on electronic distribution, and thus the use of experts was thought to be necessary. However such people are by their nature a scarce commodity and tend to be geographically dispersed. This would point towards the use of a postal questionnaire, but, given the complexity of the issue, it was decided that it would be necessary to give participants feedback and the opportunity to explain their viewpoint. Structured interview and focus groups were also considered, but ruled out because of logistical and cost challenges. The Delphi technique combines the advantages of a questionnaire with the flexibility and feedback elements of an interview or focus group (Linstone and Turoff 1975). It is particularly useful where

the problem being researched "does not lend itself to precise analytical techniques but can benefit from subjective judgements on a collective basis", where "time and cost make frequent group meetings in-feasible", where "disagreements among individuals are so severe that the communication process must be referred and / or anonymity assured" and also where "the heterogeneity of the participants must be preserved to assure validity of the results, i.e. by avoidance of domination as a result of quantity or strength of personality (bandwagon effect)" (Linstone and Turoff 1975). In this case, the use of subjective judgements and the arrival at a consensus was thought essential. Furthermore, anonymity between participants was thought to be prudent to prevent personal or professional differences from biasing the results. For these reasons, the use of a Delphi study was considered to be the most appropriate research method available.

Taking its name from the location of the Oracle in ancient Greece, the process used to undertake Delphi studies, in their modern incarnation, is well documented (Loveridge, Georghiou et al. 1999). A panel of experts is solicited to give their opinions on a subject. Each is guaranteed anonymity in terms of their responses, and neither meets nor corresponds with each other. Participants answer written or oral questions given to them by the facilitator. Their responses are summarised, and they are usually given at least one opportunity to re-evaluate their answers based upon examination of the group response, although three iterations has been found to be the optimal number for a successful study (Linstone and Turoff 1975). The first iteration is characterised by exploration of the subject under discussion, wherein each individual contributes information pertinent to the issue. The second involves the process of reaching an understanding of how the group views the issue (i.e. where the members agree or

disagree and what they mean by relative terms such as importance, desirability or feasibility). If there is significant disagreement, then this disagreement is explored in the third and subsequent iterations to bring out the underlying reasons for the differences and possibly to evaluate them. The last phase occurs when all previously gathered information has been analysed and consensus has been reached on the major issues (Linstone and Turoff 1975). While early applications of the Delphi technique were aimed a building consensus, more recently it has been recognised that the reasons for dissent given by those that do not subscribe to the consensus are also worthy of note (Loveridge 1999). Where some experts do not agree with the consensus, they can be asked to justify their responses or to provide other members of the panel with information they posses that justifies their extreme response (Rudolph 2000).

One of the main criticisms of the Delphi method is the validity of the criteria used to identify participants in the panel of "experts". While in certain domains, subject experts may be readily identifiable; no such grouping was available in the field of hotel electronic distribution. Examination of other studies in the area revealed a variety of different techniques for choosing the panel. For example, previous research in the subject area (HEDNA 1997) used a quasi-Delphi technique, involving iterative personal interviews with "recognised experts" in the field. These were chosen on the basis of "industry knowledge and experience and were recognised as being authoritative industry leaders, key influencers and decision makers at senior management level". However such an approach was felt to be subjective and a more empirical methodology was though to be more appropriate for the purposes of this study. In this case, the Delphi panel was selected by identifying people who had

made presentations on technology related subjects at international hospitality and tourism conferences in the 30 months prior to the study. Such an approach was thought likely to identify individuals truly perceived as being expert in the area, while at the same time giving a cross section of representation in terms of hospitality industry sectors and job positions. Using the events calendars of two major tourism academic journals ("Tourism Management" and "The Annals of Tourism Research"), a list of tourism and hospitality conferences was compiled. While a total of 139 conferences were identified, it was clear from their titles that some events were not relevant to the research study. Those dealing exclusively with geography, ecology, education, heritage and anthropology were eliminated from further consideration, resulting in a total of 105 conferences for further investigation.

Attempts were made to obtain the speaker details of each of these conferences, either by contacting the conference organisers listed in the event's calendar or by searching for details on the World Wide Web. Detailed information was traced for a total of 50 conferences and a database of presenters on technology related subjects was compiled. 621 speakers at 30 different events gave 837 relevant presentations. Those who made three or more presentations at different events were selected, giving a subset of 47. Both the author and a member of the supervisory team were removed from the list, leaving a starting panel of 45 members representing industry, academia and intermediaries. While it was hoped to have a broad and well-balanced participation of experts with regard to professional background and industry sector, the methodology used to identify experts resulted in a situation where academics formed a slightly larger group than those from the other categories. However, the effect of this seems to have been minimal, as in questions where a statistical analysis

of responses was appropriate, no statistically significant differences could be found between the responses of the academics and those of the other constituent groups. It was also planned to exclude any electronic distribution managers from the top 200 hotel companies to prevent cross contamination with later stages of the study. However, in this case, such an action was unnecessary as none of the people identified for inclusion in the panel held such a position at the time of the survey. The names and affiliations of all participants that completed at least two rounds of the Delphi are listed in Appendix One.

Table 3.1 - Analysis of Conferences in Hospitality and Tourism

Period	Identified	Eliminated	Remainder	Traced
Latter half – 1997	47	10	37	14
1998	76	20	56	29
First half – 1999	16	4	12	7
Total	139	34	105	50

The selected experts were invited to participate in the study and given the option to be participate by fax or email. Following a process similar to that outlined by Schuster (1998), initial contact was made by faxed letter of invitation, enclosing a short outline of the purpose of the study. It was forecast that this would help gain commitment to participating in the study and thus encourage a higher response rate (Ballantine and Stray 1999). 42 experts accepted the invitation, with everyone opting to communicate by email. Each was asked to rate their level of expertise with respect to the topic of the Delphi using a rating scale adapted from earlier studies (Loveridge, Georghiou et al. 1999). Although not reliable in the statistical sense, this self-rating does help to

position the level of expertise of the panel and add credibility to their opinions. The five descriptions offered are presented in Table 3.2

Table 3.2 – Expertise Categories

1.	Unfamiliar with the topic.
2.	Casually acquainted if you have read or heard about the topic in the media or other popular presentations.
3.	Familiar with the topic if you are familiar with issues about the topic, have read about it and formed some opinions about it.
4.	Knowledgeable if you were once an expert but feel somewhat rusty now, or are in the process of becoming an expert but still have some way to go to achieve mastery of the topic, or if you work in a neighbouring field and occasionally draw upon or contribute to the development of the topic.
5.	Expert if you consider yourself to belong to the community of people who currently dedicate themselves to the topic matter, and are recognised outside of your organisation as having a strong grasp of trends or other aspects of the topic.

The modal response of the panel was "5", the mean self rating was 4.13, with a standard deviation of 0.95 and a negative skew (-0.602), indicating that the majority of people see themselves at the upper end of the scale. Nearly 75% of respondents rated themselves at a score of "4" or above. Only a single person rated themselves at a score of less than 3. This person was subsequently contacted to find out the reason for their low rating. It emerged that the respondent had a computer science background, and therefore did not feel comfortable addressing electronic distribution issues as an "expert" from a managerial perspective, and by mutual agreement, was removed from the study. Despite its problems of reliability, the self-rating adds to the

validity of the panel as an expert group to give their opinions about hotel electronic distribution.

The use of email as a response option was a deliberate strategy. According to the Center for Research on Writing and Communications Technologies, in addition to being more cost effective and efficient to administer (Schonland and Williams 1996), the use of email as a method of survey communication with the appropriate subject group usually generates higher response rates than with paper surveys. Using email as the survey method also tends to result in higher quality responses (Mehta and Sivadas 1995). This is reflected by higher levels of response completeness, more frequent open end comments (Comley 1996), as well as generating more candid answers from respondents as a result of the perceived informality of the medium (Center for Research on Writing and Communications Technologies 1999). Use of email as the communications medium also gives rise to a time advantage over postal methods. For example, in a comparative study of response rates using mail, email and the Web as the communications medium carried out in the UK, nearly two-thirds of all email questionnaires were returned within 3 days, while it took 11 days for the same percentage to be returned by postal response. The combination of cost advantages, the increases in effectiveness and the time advantages augured well for the use of email as a response mechanism. Limitations include the possibility that not all respondents would use email. However, given the profile of the panel – "experts" in the area of hospitality or tourism information technology – it was thought likely that respondents fitting this profile would be familiar with and supportive of the use of email, and would use it on a regular basis. In any case, this limitation was minimised by giving respondents the option to receive the questionnaires / reports and reply

either by fax or email. Furthermore, email surveys have been found to generate higher response rates where the panel has agreed to participate or with whom the researcher has some connection – hence the letter of introduction and invitation to participate discussed above (Schonland and Williams 1996).

Where previous email studies have experienced problems with response rates, some of the explanations given include "fear of email technology", "the difficulty of completing email surveys" and "the ability to trace a respondent when researching a politically sensitive subject" – in the latter case for a survey related to ethics and corruption. As was discussed above, for this research panel it was thought likely that panel members would use email on a regular basis, and the subject area was not thought to be particularly sensitive, and thus a problem with response rate was not forecast for these reasons. However the limitation in terms of "difficulty of completing email surveys" was problematic. As Tse (1995) observes, email software clients are limited in the amount and format of data that they can effectively display. Extended character sets (used for layout and punctuation), formatting (e.g. bold and italic text) and graphics cannot easily be included in a manner that will be guaranteed to display correctly and consistently in different email packages. While, in this case, such problems were forecast to be minor as a result of the profile and perceived technical ability of the recipient group, it was still a cause for concern. The limitation was overcome in different manners in each round of the Delphi. In the initial round, as will be discussed below, the questionnaire was kept deliberately simple. It was composed of four textual questions, and asked respondents to give free form answers. As a result of its simple format, and the anticipated simplicity of responses, the questionnaire was included as text in the body of an email message. In the subsequent

rounds, the questionnaires were more complex, and included diagrams, tables and a combination of open and closed questions. As such, it would have been difficult to incorporate them into the body of an email. Instead, detailed instructions for completion and a brief explanation of the purpose of the survey were sent as the text of the message, and the questionnaire itself was dispatched as a Microsoft Word attachment. Only a single panellist experienced difficulties with this approach, and resending the message solved the problem. Overall the use of email as a data collection method appears to have been successful. As will be discussed below, response rates are high in comparisons with comparable Delphi studies, few technical or administrative problems were encountered and the process appears to have been implemented smoothly.

A total of three iterations were used in this Delphi study. The first explored the panellists' understanding of the arena of electronic distribution in general and asked them to list desirable factors that could be used to evaluate hotel electronic channels of distribution. The second round instrument established the percentage that supported each factor, explored if different factors should be used depending on whether the evaluation was occurring at the adoption of a channel or for its continued use, as well as rating each on an importance scale. The third and final iteration reprioritised the evaluation factors by presenting the mean rating scores from round two and asking panellists to reassess their opinions based on the results of the group as a whole if they so wished, and furthermore to identify the factors that they felt to be most important when both adopting or considering the continued use of a hotel electronic distribution channel. During the course of each round, personalised reminders were sent to those respondents that had not replied within two weeks of the

initial email, with a further reminder one week later. Such follow up has been shown to be effective in previous studies (see for example Kanuk and Berenson 1975, Brennan 1992 or Wright 1995) and was certainly beneficial in this case. Response rates for each round are shown in Table 3.3. Such rates are higher than those normally achieved for surveys of this type (Loveridge 1999), which generally fall into the range of 25 to 54% (Bradley 1999), and thus were considered acceptable for the purposes of the study. An even higher response rate might have been achieved for rounds two and three had it not been for the length of both the summary documents and the questionnaires themselves, as a number of respondents noted that this had acted as a disincentive to completion of the survey.

Table 3.3 – Response Rates to Delphi Rounds

Round	Potential	Round 1	Round 2	Round 3
Number of responses	40	28	25	24
Response rate	100%	70%	63%	60%

When the results of each round were being analysed, the question arose as to the effect of non-response error. While such error is possible, analysis of the composition of the respondents from each of the rounds suggests that such bias has not occurred. As can be seen from Table 3.4 the pattern, as regards industry sector and professional background, is similar to that of the original panel and is also similar across rounds, suggesting that the effect of non-response error can be discounted.

Table 3.4 – Percentage Composition of Responses

Category	Percentage of Potential Panel	Round 1 Percentage Response	Round 2 Percentage Response	Round 3 Percentage Response
Academic	36	39	36	36
Consultant	20	18	20	20
Hotelier	12	14	12	12
Researcher	12	11	12	12
System Supplier	20	18	20	20
Total	100	100	100	100

3.3.2.2 Delphi Implementation

A combination of suggestions from the literature and information gleamed from informal interviews with industry practitioners provided the basis for the design of the initial questionnaire. However, following the suggestions of Gordon and Helmer (1965), this was purposely designed to be general to avoid influencing respondents at the initial stages of the study. Thus efforts were made to make the questionnaire as "blank" as possible – thus helping to minimise variations in interpretation or difficulties in assimilation until the common vocabulary of the group could be established. In this case, the questions commenced by asking open questions on the respondent's understanding of the term "electronic distribution"; on the range of electronic distribution channels currently available to hotels; and on how such channels should be evaluated. The use of such open questions is a commonly accepted technique, often used in questionnaires to generate ideas and encourage brainstorming (Gendall, Menelaou et al. 1996). A copy of the questionnaire is shown in Appendix Two. The questionnaire was piloted and distributed to the research panel

in December 1999. Responses to the initial round were tabulated and analysed using the techniques described in the data analysis section below. A summary document was drawn up and circulated to the expert panel by email in March 2000, along with the second questionnaire. The latter focused on a variety of areas – establishing the level of expertise of the respondents, attempting to establish where electronic distribution starts and ends, validating a comprehensive list of electronic distribution channels for the hotel product and validating the list of evaluation factors identified in the first round. Once again, findings were tabulated, analysed and presented to panel members. A third Delphi round in June 2000 allowed respondents to comment on the overall findings and to evaluate the results of the consensus. The findings confirmed that the range of evaluation factors identified appeared distinct, exhaustive and appropriate to knowledgeable observers. The results presented in Chapter Four are a consolidation of the three Delphi rounds – that is to say the factors identified in round one and ranked in round two, modified by any changes suggested by round three.

3.3.2.3 Data Analysis

Qualitative research may, by its very nature, produce large quantities of data, the management of which can be daunting and overwhelming to the researcher. This problem was particularly relevant in this Delphi study, where many of the questions were open ended and phrased in a manner to encourage respondents to suggest as many answers as possible, thus tending to generate large quantities of data (Eisenhardt 1989). Careful and systematic analysis of their responses was thus important to ensure that all data was treated equally and without bias while, at the same time, preserving its original meaning and context. It was also important to

insure that important data was not lost or overlooked (Yin 1994). This section describes the data analysis phase of the Delphi study.

Ritchie et al (1994) define the purpose of this phase as "detection" and they suggest that analysis should include the tasks of defining, categorising, theorising, explaining, and mapping. According to Saunders (1997), data analysis consists of four phases – categorisation, unitising, recognising relationships and developing / testing hypothesis. Other researchers use alternative terminology. For example, in the grounded theory approach described by Strauss and Corbin (1990), the disaggregating of data into units is called "open coding", the process of recognising relationships between categories is referred to as "axial coding" and the integration of categories to produce a theory is labelled "selective coding". A similar technique is known as "content analysis", which is defined as "a research tool used to determine the presence of certain words or concepts within texts or sets of texts" (Center for Research on Writing and Communications Technologies 1999). However, irrespective of what it is called, essentially the process and end result are the same - the non-standardised and complex data that has been collected is classified into categories and meaningfully analysed. The process allows the researcher to systematically rearrange and rigorously analyse the data, in order to identify key themes or patterns from it for further exploration, develop hypothesis based on these apparent patterns or relationships, and draw / verify conclusions (Kerlinger 1986). Without such an empirical process, the most that can be achieved is an impressionistic view of what the data means.

With the unitising / categorisation or open coding phase, the data that has been collected is disaggregated into conceptual units and provided with a label. Strauss and Corbin (1990) suggest that there are three main sources for deriving names for these categories – the researcher derives them, they come from terms used in existing theory or literature, or they are based on terms used by your participants ("in vivo" codes). However the authors council against names being derived from existing theory and literature in a grounded approach. This is because in the written account of the research, readers may interpret such phrases according to their previous understanding of the concept, rather than the particular meaning that now being placed on such terms by the researcher. For that reason, in vivo codes, derived from respondents' own phraseology, were used as labels in this research study. Selective reduction was used to analyse respondents' answers and code them into manageable content categories. Each of these was given a label consisting of a word, set of words or phrase, thus making it possible to focus on the concepts that were indicative of the research question. In this case, the eight-step process proposed by Carley (1990) was utilised, and respondents' answers were analysed for the existence of phrases relating to evaluation methods.

A limitation of this methodology is that the content being sought in the text being analysed may be implicit instead of explicit. Coding for implicit terms, and deciding their level of implication, is complicated by the need to base judgements on a somewhat subjective system (Center for Research on Writing and Communications Technologies 1999). To attempt to limit this subjectivity, as well as to help increase reliability, coding is usually facilitated by the use of either a specialised dictionary or contextual translation rules. However, in this study, as the objective was to develop a

broad list of possible evaluation methods, this limitation was not as severe as normally associated with the process. Subjective judgements were not made on the meaning or interpretation of implicit terms, but such phrases were added to the list of possible labels and subsequently reconsidered by the panel in later rounds of the study. Furthermore, a predefined list of coding terms was not used, because, as was stated earlier, the objective was to in effect to develop such a list. Instead a flexible interactive approach was utilised, allowing new categories to be added to the list as they were first encountered, and reassessed at a later stage.

Because an inductive approach was used and the research process commenced without a basis in existing theory, the initial analyses gave rise to a large number of conceptual labels, the majority of which were at a very low level of focus (Saunders, Lewis et al. 1997). As a result, these had to be compounded and placed into broader groups or categories – a process referred to as axial coding. This term describes the process of looking for relationships between the categories of data that have emerged from the open coding process. As relationships between categories are recognised, they are rearranged in a hierarchical form, leading to the emergence of subcategories. The essence of this approach is to explore and explain a phenomenon by identifying what is happening and why. As was mentioned above, the initial analysis of the qualitative data gave rise to a large number of freestanding concepts. The axial coding phase clustered these concepts into related categories with similar implicit meanings in order to consolidate the methods identified and develop a more workable vocabulary. The iterative nature of the Delphi process allowed the expert panel to comment on and validate this consolidation. Furthermore, at the end of the coding process, the "irrelevant" information was re-examined to establish if evaluation

methods had been missed or if the coding system need to be altered. As a result of the use of the interactive approach detailed above, no alterations or additions were found to be necessary in this case.

In this study, the open and axial coding processes were carried out by hand supported by the categorisation and filtering facilities of a computer spreadsheet. Prior to adopting this approach, experiments were carried out as to whether various dedicated computer applications should be used to assist in the process. Some of the computerised tools considered included Nud*IST, ATLAS/*ti* and Inspiration. Each is a computer software package designed to aid researchers in managing and analysing non-numerical, unstructured data by supporting processes such as indexing, searching or theorising (Gore 1995). The advantage of such programs is that by entering the required categories, the coding process can be automated and large amounts of data can be examined quickly and efficiently. However, the successful use of these tools is very much dependent on category construction. In this study, as one of the objectives was to identify the range of evaluation methods available (rather than to establish how often a predetermined list occurred), it would have been difficult to define categories in advance and thus the use of a computerised package was not felt to be appropriate. Other factors that argued against the use of a software program were that the range of terminology and lack of a common vocabulary discussed below would make the formation of appropriate categories in a format suitable for use by such applications problematic. In addition, the major strength of computerised processes of this type is that they allow relationships to be uncovered between attributes of the respondents and the content of their responses. This, while undoubtedly interesting, was not an objective of this study and there would add little

value to the results. Lastly, the amount of data to be analysed was relatively minor in comparison with many qualitative studies that involve hundreds if not thousands of subjects. Thus, it was though to be both feasible and appropriate to carry out the analysis required using manual methods.

The final process in the data analysis stage involves conclusion drawing and verification. Here, the researcher draws meaning or interprets the data displays while protecting himself from threats of analytic validity (Huberman and Miles 1994). Strauss and Corbin (1990) recommend that you do this by formulating questions or statements, which can then be phrased as hypotheses, to test these apparent relationships. As you undertake this process, you will be looking for evidence that supports these questions and also for negative cases that demonstrate variations in these relationships. For verification, the researcher should use triangulation with other sources of evidence, looks for negative cases, investigates inconsistencies and unsubstantiated evidence, and attempts to define alternative theories or explanations. In this study, the use of graphical presentation techniques was found to be particularly effective to aid in this process, as it allowed relationship to be both identified and explained in an effective manner. Furthermore, the iterative nature of the Delphi process meant that theories and hypothesis could be tested with, and validated by, the expert panel, thus helping to clarify issues more easily than if alternative research techniques had been used.

3.3.2.4 Limitations of the Delphi Method

A variety of limitations were encountered in the implementation of the Delphi study. Firstly, in a very general sense, the nature of the research methodology chosen limited

the usefulness of the research findings. As stated in the introduction to this chapter, the role of qualitative research is to generate understanding, not for its results to be generalised to a larger population (Stake 1994). Yin (1994) defines its purpose as "to expand and generalise theories (analytic generalisation) and not to enumerate frequencies (statistical generalisation)". The conclusions of this type of research should therefore be regarded as suggestive, not definitive (Babbie 1995) and should only be used as one small step towards grand generalisation (Campbell 1975). To this end, in the final stage of this study described below, the list of evaluation techniques generated by the Delphi is presented to knowledgeable industry practitioners, both to measure their usage but also to test their validity and acceptability to the industry as a whole.

Two more specific problems were encountered during the implementation of the Delphi. The first was caused by the international profile of the expert panel. While the language of the survey was English, it became apparent from certain responses that this was not the first language of some respondents. A particular case in point was where one respondent, despite the definitions given in the glossary, confused the term *distribution* with *distributed* in the database theory sense. The effect of this problem was amplified by the lack of a common vocabulary among participants. Despite efforts to keep the terminology used in the questionnaires as clear and unambiguous as possible and the inclusion of a glossary in the second and third iterations, some respondents were still confused as to the meaning of certain terms. However the effect of this appears to have been relatively minor, with only two respondents directly expressing uncertainty. A related issue was the respondents' ability to concisely express their thoughts in writing, especially during the first round

(before a common vocabulary had yet to be established). Each of the open questions generated answers that included stylistic variations in the wording and phraseology used to describe certain subjects. These were collated by the researcher's perception of content as opposed to what might actually have been intended by the respondent. Although scientific techniques were used to guard against this threat to validity, as (Rudolph 2000) points out, "conscious awareness does not preclude its occurrence". For that reason, certain elements of the research may be subject to researcher's interpretation.

The second problem noted was related to the use of a questionnaire as the survey instrument. Questionnaires by their nature are limited in that, where responses are of an ambiguous nature, the researcher cannot probe to establish exactly what the respondent means. Throughout the analysis, a variety of cases were encountered where it was not immediately apparent from the respondent's answer what was meant, or their response was open to alternative interpretations. However, this limitation, while still important, was lessened by the use of the Delphi technique as the research method. As has been discussed above, this process allows respondents to clarify their responses by commenting on the summary documents presented and also by changing their responses when answering questions in subsequent rounds.

3.3.3 Stage Three – Industry Questionnaire

While the Delphi study established a typology of channels available for hotel electronic distribution, such findings are both theoretical, and, as a result of the qualitative research process utilised, not generally applicable outside of the expert

group. The objective of the industry survey, therefore, was to measure the acceptability and applicability of these findings to industry practitioners.

The sample frame was defined as the electronic distribution managers in the Top 200 hotel brands (as outlined in the Hotels Magazine annual profile of the hospitality sector (Hotels 1998)). Focusing only on chain hotels was a deliberate strategy resulting from the diverse structure of the worldwide hotel industry (Olsen 1993). As was explained in Chapter One, this is dominated by a small number of large companies, but there are also a large number of smaller chains and independent properties that, while individually insignificant, collectively form the majority of both rooms and revenues (Buhalis 1993). However, chain hotels tend to be the better performing segment, both in terms of sales and of profitability (Horwath International 2000). Independent properties tend to be less professionally managed (Morrison, Taylor et al. 1999), and marketing has been identified as a particular weakness (Buhalis 1999). As a result, independents were thought to be less likely to use or be familiar with developments in electronic channels of distribution (Sussmann and Baker 1996). Hotel chains, on the other hand, have been shown to use technology and to have the resources and expertise to make them more experienced with technology based system (Morrison, Taylor et al. 1999, Sheldon 1983). Chain properties also have more professional management structures that are more likely to use evaluation techniques (Olsen, Zhao et al. 1995). These reasons, coupled with the difficulty in identifying a reliable sample frame of smaller and independent properties, lead to a decision to exclude such properties from the scope of the study.

3.3.3.1 Sampling Issues

A sample frame based on the top 200 hotel chains (ranked by number of rooms) was initially considered. However, prior research had noted difficulties in researching electronic distribution among the top hotel companies (O'Connor and Horan 1999). Many of the top hotel chains are composed of multiple brands, each of which operates their own distribution policy. For example, "Starwood Hotels and Resorts" operates six different major brands (Sheraton Hotels and Resorts, Westin Hotels and Resorts, St. Regis Luxury Collection, W Hotels, Caesar's and Four Points respectively), each of which has different and independent distribution strategies. Therefore, focusing the survey on the chain itself would lead to problems in terms of accuracy. In addition, many chains are REITs (Real Estate Investment Trusts) – companies that are primarily investors and not operators of hotels. The majority of REITs run their hotels based on management contracts or franchise agreements (often engaging the services of other companies in the top 200, and often with several companies simultaneously). This means that composing a reliable sample frame would be to all intensive purposes impossible, as each member of the frame could not accurately be identified.

Since the issue of distribution is closely linked to brand (as will be seen in Chapter Four), it was decided to refine the criteria for inclusion in the survey from the top 200 hotel companies to the top 200 hotel brands. As a result, the sampling frame was defined as the electronic distribution managers in the top 200 hotel brands as outlined in the Hotels Magazine annual profile of the hospitality sector (Hotels 1998). Such a strategy had the advantage of including consortia such as Best Western, Leading Hotels of the World, etc., which, while not hotel companies *per se* (as they do not

own hotels), are still major players in the arena of hotel electronic distribution. However this strategy also had disadvantages, as it was likely to under represent European hotels who are less likely to be branded than their US or Asian counterparts (Prada 2001). That being said, on a worldwide basis, the chosen sample frame represents approximately 33.5% of unit properties and the majority of bedroom stock (Morrison, Taylor et al. 1999), and, given the arguments made earlier about excluding independent properties, was considered to be the most appropriate to help achieve the objectives of this study. The use of sampling was considered, but the relative increase in resources necessary to survey the entire population was thought worthwhile. According to Saunders et al (1997), the minimum acceptable sample size for a population of 200 at the 95% confidence level would be 132. Given the relatively minor increase in resources necessary to survey the entire population, and the benefits that avoiding the use of sampling would have in eliminate sampling error, it was decided to survey the entire population.

3.3.3.2 Research Instrument

The research instrument used was an electronic questionnaire, incorporating both open and closed questions, delivered by email in September 2000. Both the size and the worldwide geographical dispersion of respondents dictated the use of this research instrument and delivery mechanism (Salkind 2000). The use of alternative research strategies, including a telephone survey with the same subject group, was also considered, but rejected on both the grounds of cost and also because of an anticipated difficulty in contacting the correct person. It was also considered unrealistic to expect respondents answering the phone to give up their time immediately and without warning. A questionnaire has the advantage that it can be completed at the

respondent's convenience, and supplementary information obtained by the respondent if necessary (Brennan 1992). While a focus group would have allowed the issues to be explored in more depth, the organisational and costs issues associated with gathering a sufficient sample of suitable subjects together in one place made such a strategy unfeasible. Thus, the use of a questionnaire, implemented using electronic media as explained below, was thought to be the most appropriate research strategy.

Despite their common use and numerous advantages, the use of self-administered questionnaires as survey instruments suffers from a variety of limitations. Chief among these are the inability of the researcher to clarify questions and probe responses, and also relatively low response rates in comparison to other research methods (Saunders, Lewis et al. 1997). Self administered questionnaires are relatively static in comparison to other research methods, which can lead to ambiguity and misunderstandings where the respondent interprets the question in a manner different to the way in which the researcher intended. In addition, questionnaires do not give the researcher the ability to explore respondent's answers in depth, seeking clarification and expansion of their ideas. As a result, the quality of data collected using a questionnaire can often be lower than that which would be achieved if a more interactive survey instrument were used. However a variety of different steps can be taken to minimise this limitation. These include the careful construction of the research instrument to avoid ambiguity, the provision of comprehensive explanations to minimise confusion and the piloting of the research instrument in advance of the main survey in order to identify and rectify potential problems. In this study, the questionnaire was piloted with both academic colleagues and a small number of industry practitioners to verify its comprehension and design. In addition to written

comments received, those involved in the pilot study were contacted by telephone to discuss any problems or ambiguities that they believed were present in the questionnaire. Modifications were made to elements of the wording of questions based on this feedback, before the final version was developed in HTML. A glossary of technical terms was included at the end of the questionnaire to help clarify the meaning of technical terms, and the Web based nature of the final questionnaire allowed hyperlinks to be included in the main body of the text – in effect allowing respondents unsure about the meaning of a term to be taken directly to its definition in the glossary.

3.3.3.3 Survey Implementation

To help achieve an adequate response rate, the questionnaire was sent to named individuals within each of the selected hotel brands. This helped ensure that the respondents were both capable of answering the questions posed on behalf of their company and knowledgeable about electronic distribution (Schonland and Williams 1996). However, developing a database of such individuals proved considerably difficult, and thus consideration was also given to simply addressing the questionnaire to the electronic distribution manager within each brand. Both the literature and feedback from industry sources revealed that such a strategy was unlikely to generate an acceptable response rate. Specifically targeting named individuals has been shown to be more likely to result in higher response rates, and thus was though more appropriate in this case. A solution was found by seeking the assistance of the main industry association working in the area – the Hotel Electronic Distribution Network Association (HEDNA) and obtaining their support for the survey. Analysis revealed that there was a high degree of overlap between the membership database of this

association and the target group for the survey, and thus it was decided to survey the entire membership of HEDNA and to ask respondents their job title so as to remove the answers of those not included in the sample frame. This solution also had the advantage in that it was likely to generate a higher response rate, as the literature suggests that the support of a reputable organisation with which respondents are familiar helps increase their willingness to respond (Salkind 2000).

The questionnaire itself was unusual in that it was implemented using an email survey tool. As with the target group for the earlier Delphi study, the use of a technology based instrument was thought to be appropriate as a result of the characteristics of the subjects being surveyed. As electronic distribution managers in the largest hotel brands, it could reasonably be expected that they would be both comfortable with the use of technology on a daily basis, and interested in seeing an innovative Internet based survey tool at work. In addition, the use of HTML based survey interfaces has been shown to provide advantages in terms of an improved questionnaire interface, increased response speed and higher popularity among respondents (Comley 1996). Bradley (1999) divides e-mail questionnaires into three types. Type I is a "simple" e-mail message with questions. Type II is an "attachment", which is delivered with a covering e-mail letter. Type III is "URL embedded", whereby an e-mail request for participation has a URL embedded in the message. The respondent simply clicks on this hypertext link, which then invokes their web browser, presenting the reader with a web-based questionnaire. In this case, the methodology used could be classified as Type II as each respondent was emailed a HTML copy of the questionnaire. This allowed them to complete the questionnaire and dispatch their answers electronically, while still preserving convenience advantages of normal questionnaires discussed

earlier. Their responses were automatically compiled on a Web server, which helped with data analysis. Consideration was also given to the use of a pure Web based survey tool – where the respondent would go to a Website and complete the questionnaire online (Type III). However, given the estimated time needed to complete the questionnaire (10 minutes), it was thought to be unreasonable to expect someone to remain online for such a long period of time. The use of the email method allowed respondents to download a small file as an email attachment, complete it off-line at their convenience and only need to be connected when submitting the response. In the accompanying email, respondents were also given the option of receiving the questionnaire by fax or as a Microsoft Word file in case they did not wish to complete it electronically, but none made such a request. Distributing the questionnaire as an email attachment also meant that the problems with consistent appearance identified by Tse (1995) discussed earlier were not encountered. A variety of different email / HTML based survey tools were tested by composing sample questionnaires and emailing them to a test group. A product called WebSurveyor was found to be capable of providing appropriate facilities at an acceptable price and was chosen to develop and administer the HTML questionnaire.

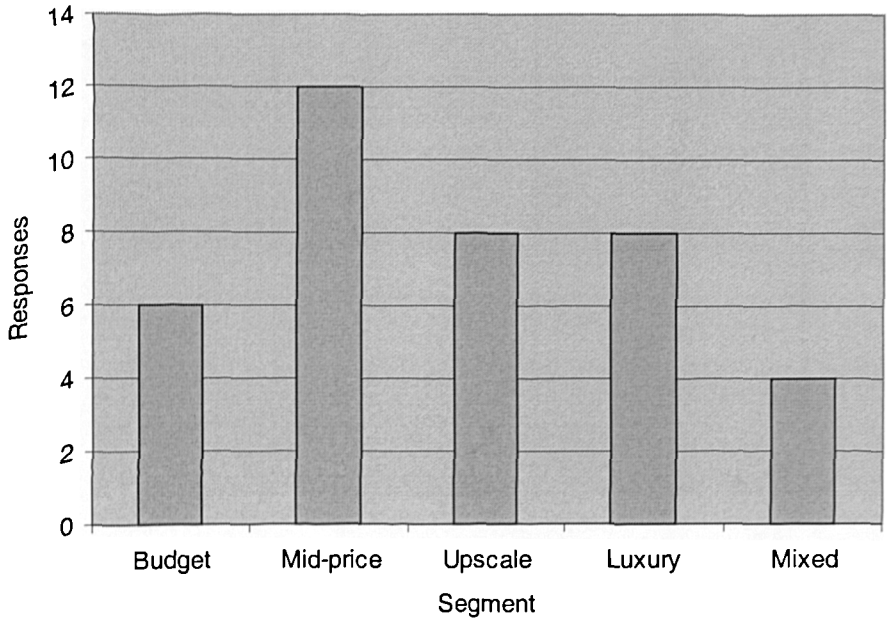
The questionnaire focused on collecting two different types of data; factual data such as the range of electronic channels of distribution being used by the companies, and opinions such as whether the company currently evaluates its electronic distribution channels and how such evaluations should be carried out. Both open and closed questions were used, but in the latter case, not all of the options identified in the Delphi were presented to industry practitioners for consideration. One of the basic assumptions of questionnaire design is that it should not place unreasonable demands

upon respondents in terms of time, expertise or effort (Salkind 2000). Limiting the number of options presented is a commonly accepted technique and leads to higher completion rates and response rates, and thus to a better quality set of findings. Although a large amount of data was collected by the Delphi study, only the most commonly cited channels / factors were incorporated as possible responses to closed questions to avoid overwhelming respondents with information. They were, however, given the opportunity to suggest omissions in all such questions, and their responses were cross-referenced with those from the Delphi panel to identify overlap. The questionnaire also include a small number of questions about the characteristics of the hotel brand itself (i.e. number of properties, number of hotel rooms, etc in order to measure organisational complexity and to establish if there were differences in behaviour and / or opinions across different segments of the industry). A paper-based representation of the questionnaire is included in Appendix Three.

3.3.3.4 Response Rate

A total of 42 responses were received in the allotted timeframe, giving a response rate of 25 per cent, which was considered adequate for the purposes of this study. These responses represented the views of the electronic distribution managers of 36 hotel brands, representing over 21,000 hotel properties and nearly 600,000 hotel rooms. The mean number of properties within respondent companies was 625 while the mean number of rooms in companies represented by respondents was just over 20,000. Respondents were relatively evenly distributed in terms of market segment serviced, although, as can be seen from Figure 3.1, there was a slightly larger response from mid-price hotel companies. However this was relatively minor in terms of overall response and should not bias the results in any major way.

Figure 3.1 – Respondents Broken Down by Company Market Segment



3.3.4 Data Analysis

Unlike stage two of this study, much of the data collected in the final stage was quantitative in nature, and thus could be analysed using statistical methods. The computerised tool SPPS (Statistical Program for Social Sciences) was used as the data analysis tool to help tabulate data and establish relationships between variables. Analysis began using simple frequency distributions to determine to what extend hotel brands are using and evaluating their electronic channels of distribution. Then, the data was grouped so that responses could be analysed by hotel group size, number of rooms and market segment. The ability to analyse data in subgroups is important, since Keltner et al (1999) has noted "Industries may not be the most appropriate level of analysis for the study of service sector productivity". Instead such analysis is most appropriately conducted by examining the variation across the sectors of the lodging industry: Therefore, one-way ANOVA, cross-tabulation, *chi*-squared tests and *post-*

hoc comparison were used to evaluate differences across groups. A discussion of the findings of this part of the study is presented in Chapter Five.

3.4 Research Design Quality

Assessing the quality of a research study is a difficult task, but there are four tests commonly used to assess the overall design of any research effort, irrespective of the research methods employed in the execution of the study (Connolly 1999). These include construct validity, internal validity, external validity and reliability (Babbie 1995).

3.4.1 Construct Validity

The overarching concept of validity is to ensure that a study reflects the true meaning of the concepts under investigation – there should be a high degree of congruence between what is being measured and the instruments and variables used to measure them to ensure that the essence of reality is accurately captured, interpreted and reported (Salkind 2000). Construct validity refers to the extent to which an operational level variable being measured represents a conceptual level variable of interest (Sekaran 1992). Yin (1994) suggests three commonly used tactics for increasing construct validity; using multiple sources of evidence to demonstrate convergent lines of inquiry (triangulation); the establishment of a chain of evidence to link questions asked with data collected and conclusions drawn; and the review of preliminary findings by key participants or informants.

Each of these techniques was used throughout thus study, thereby helping to build a higher order of construct validity. As noted above, triangulation is a common means

to help achieve construct validity. Janesink (1994) suggests five types of triangulation, namely data triangulation (the use of multiple sources of evidence in a study), investigator triangulation (the use of multiple researchers or evaluators), theory triangulation (the use of multiple perspectives to explain and interpret a set of data), methodological triangulation (the use of multiple methods in a study to investigate the same problem) and interdisciplinary triangulation (the use of multiple disciplines to inform a research process). In this study, several of these aspects were utilised. Data triangulation was made possible by combining the findings from the literature review, the multiple rounds of the Delphi study and the industry survey. Investigator triangulation was facilitated by the Delphi process itself, which allowed the panel of experts to review and comment on the summaries of each round. Methodological triangulation was established by using multiple research methods (as has been discussed throughout this chapter), while interdisciplinary triangulation was achieved during the literature review stage by drawing upon the works of many different disciplines, and during the Delphi stage by selecting participants from multiple job positions and industry sectors.

3.4.2 Internal Validity

Internal validity refers only to causal or explanatory research, and addresses the measures used in the study to measure or predict what they are intended to measure and that no outside forces or hidden variables have influenced the findings (Yin 1994). As this study is exploratory and not causal or explanatory, the issue of internal validity is not relevant.

3.4.3 External Validity

External validity refers to the ability of the study to be generalised beyond the cases used in the study. In other words, it defines the boundaries or domains for which the findings can be interpreted and applied (Babbie 1995). However, with exploratory research, emphasis is placed on seeking understanding rather than an ability to generalise. As such, the goal of generalisation in such cases is with respect to the theoretical propositions, not to a larger population (Yin 1994). The latter is reserved for subsequent research and testing based on the theoretical findings of the former. At the outset of this research effort, the boundaries and context of the study were established. To reiterate a point made earlier, all conclusions regarding generalisations to a wider population other than those researched should be treated as suggestive rather than definitive (Babbie 1995).

3.4.4 Reliability

Reliability refers to the dependability of the study and its findings (Huberman and Miles 1994). Subsequent researchers, using the same cases and the same procedures should produce the same findings and conclusions, and thus a reliable study should attempt to minimise to the greatest possible extent error, biases and subjectivity. Benbasat et al (1987) suggest that reliability can be improved by providing a clear description of the data sources and how they contribute to the study's findings and conclusions. Similarly, Yin (1994) advises using "transparency of method" – conducting the study as if it and the researcher will be audited by a third party, who will attempt to reconstruct the process. Employing this degree of discipline and precision enhances the study's overall reliability. This study used both a set of research notebooks and a set of databases to maintain data files, secondary data,

working papers and other data. It provided a useful tool for organising the researcher, reducing reliance on recall and capturing the nature of evidence as it was first collected. These tools provided a reference point to which the researcher could refer throughout the analysis stage and helped preserve the integrity and meaning of the data collected. Yin also claims that reliability is also enhanced when the researcher documents as many steps as possible, a primary purpose of this chapter. Another technique to improve a study's reliability is to employ triangulation of methods and evidence, as described above under construct validity. The convergence of findings helps to build both credibility and robustness, where as the divergence of findings helps to identify problems with the research approach and to suggest new opportunities for investigation and inquisition.

In addition to assessing the validity, reliability and credibility of the data, judgements are also often made about the adequacy of the research process, through which the theory is generated, elaborated and tested (Strauss and Corbin 1990). In this case, exploratory research has been carried out to establish the range of assessment tools and techniques that could be used to assess hotel electronic channels of distribution. A three round Delphi study has been used, and the data generated has been analysed using content analysis techniques to arrive at consensus as to what techniques should be used to assess such channels. Furthermore, the acceptability and applicability of the range of techniques identified has been tested by surveying industry practitioners. At each stage, the most suitable research technique (given the time and cost restraints on the study) has been used, and the results analysed using commonly accepted techniques.

3.5 Summary

This chapter has presented the research design, methodology and data collection / analysis tools used in this study. The methodological choices - a Delphi study followed by a qualitative survey – were justified when the limitations outlined earlier are taken into account. Given the current state of knowledge about the subject area outlined in the literature review, the inductive approach used was considered the best strategy to exploring the "how" and the "what" questions regarding hotel electronic channels of distribution that are the very essence of this study. The success of the methodology is clearly demonstrated by the subsequent industry survey that confirmed and validated the appropriateness of the techniques identified. The tests for design quality described above highlight the procedures taken to insure the integrity, reliability, and validity of this study while minimising bias, subjectivity and any other errors associated with the research techniques utilised. As a result, the findings outlined in subsequent chapters should create a foundation of knowledge for which future empirical, quantitative studies can be based.

Chapter Four

Chapter Four - Delphi Study Results

4.1 Introduction

In Chapter Two it was shown how the use of electronic channels of distribution in the hotel sector is growing, and how the number and variety of routes to the customer has increased rapidly. However, it was also shown that there seem to be few objective criteria for deciding which of these channels to use, or how to evaluate the continued use of a particular channel. This chapter presents the findings of a three round Delphi study that focused on identifying and prioritising a typology of such techniques. The reasoning behind the use of a Delphi study as a research methodology for the initial stage of this research, and the methods used to implement it were discussed in detail in Chapter Three. This chapter, therefore, concentrates on presenting the findings of the Delphi study and is broken down into five main sections; the first focuses on presenting the expert panel's collective opinion as to the definition of electronic distribution, and as to what should and should not be included in the process. Section two describes the process used to empirically identify the electronic distribution channels currently available for use by hotels. The channels identified are subsequently ranked in terms of their current importance and the expertise of the Delphi panel is used to forecast which will grow and which will decline in importance in the near future. The third section discusses the findings of the study in relation to the factors that should be taken into account when evaluating the adoption of an electronic distribution channel for the first time, while section four focuses on the factors to be considered when evaluating the ongoing use of a channel. The final section compares and contrasts the factors identified in both scenarios, explores their

overall relative importance and introduces a tentative conceptual model of the channel evaluation decision-making process.

4.2 What Is Hotel Electronic Distribution?

As could be seen from the discussion in Chapter Two, even what is commonly understood by "hotel electronic distribution" is open to debate. Given its importance for defining the scope of this study, it was though important to clarify the issue before proceeding further with the investigation. Thus the first item on the Delphi questionnaire presented panel members with a definition of electronic distribution developed from the literature and invited them to comment on its appropriateness: "*Electronic distribution systems are those which use electronic media to provide relevant information to the customer to allow a purchase decision to be made, and subsequently allow the transaction to be completed by facilitating the ordering and purchase of the product*". Comments showed that there was broad general agreement on this definition; only one participant fundamentally disagreed with its scope. Otherwise comments were supportive, with "accurate, comprehensive and succinct", "accurate and concise" and "appropriate to the hotel product" being among the most favourable.

Suggestions for improvement focused on four main issues. Firstly, several respondents felt that clarification was needed as to the meaning of the term "electronic media". Confusion was expressed as to whether this was limited solely to channels that use the Internet as their communications medium, or if the meaning was broader than this. Furthermore, should only media that facilitate two-way communications be included? If not, where do broadcast media such as radio and

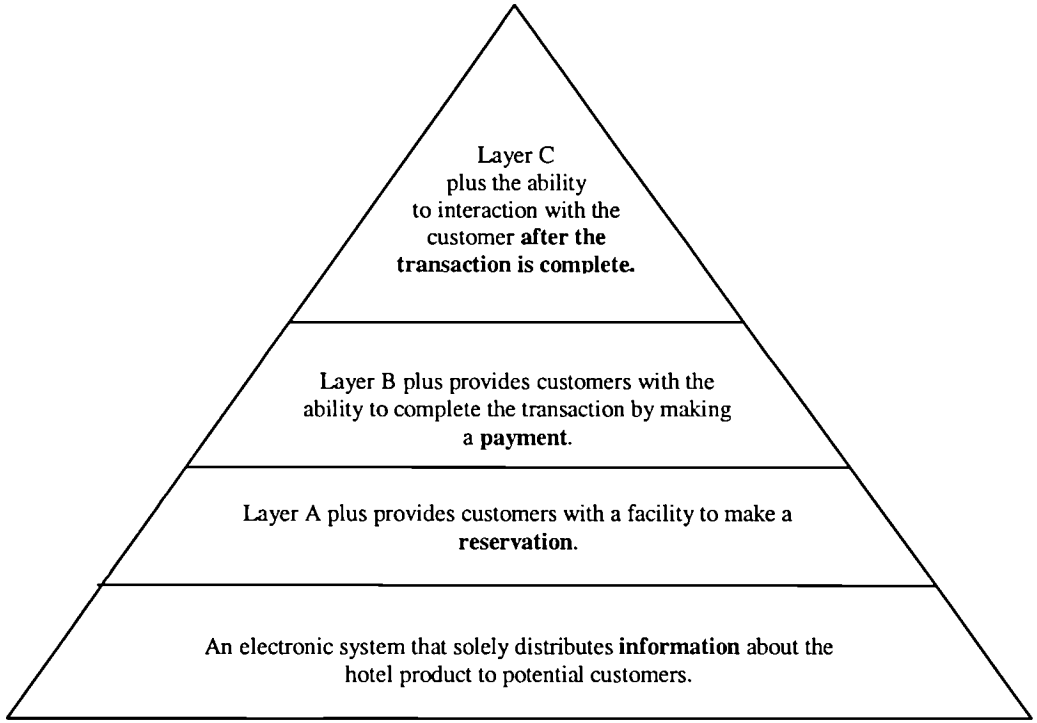
television fit into the framework? Suggestions for improvement focused on including the terms "information and communications technology" in the definition to help clarify the issue. The second group of comments focused on the use of the word "allow" in the latter part of the definition. Many respondents felt that this term was too passive to describe the role of electronic distribution in the hotel sales process, and "enable" or "facilitate" were suggested as alternatives.

The two remaining definition issues were interconnected and focused on where the electronic distribution process finishes. Is the process completed once the customer "orders" the product by making a booking, or does it continue until the "purchase" is complete? While with physical products, such arguments are clearly relevant, with the hotel product, electronic fulfilment is clearly not possible, but at the same time further transactions (such as confirmation, modifications to the booking or outright cancellation are possible). Similarly, should the definition include *payment*? Several panel members suggested that the definition as presented be extended to specifically include this process, using phrases such as "enabling payment to be made", "allowing secure payment to be made" or "facilitating a financial transaction resulting in the completion of the purchase process". Others specifically argued that payment should not be included in the definition. A wide variety of other possible processes were also suggested by individual respondents, reflecting the lack of agreement within the industry as to what exactly constitutes electronic distribution. This difficult in identifying where the electronic distribution process ends is also reflected at the other side of the process. Does a system that solely distributes information, with no expectation or facility for completing the transaction, comply with the definition of an electronic distribution system? Or should it be called something else, such as an

electronic publishing or *electronic promotion* system? Each of these issues combines to demonstrate that there was no consensus and that what should be included in the definition was unclear and merited further investigation.

In an effort to clarify the above issues, a hierarchical approach to electronic distribution (shown in Figure 4.1) was proposed in the second round. Similar approaches have been used in prior studies to gain insight into the development and evolution of other information systems, and the technique is usually referred to as a "scalogram analysis" (Domegan 1996). In this case, the hierarchy was composed of four layers, with the most basic layer at the bottom, building in a series of consecutive steps – each subsuming its predecessors - towards more advanced layers at the top. At the most basic level (layer A) was electronic systems that solely distribute **information** about the hotel product to potential customers. Layer B was composed of systems that provide the facilities of layer A and in addition provide customers with a facility to make a **reservation**. Layer C provides similar facilities to layer B, but also provides customers with the ability to complete the transaction by making a **payment**. Lastly, layer D provides all of the facilities of layer C, but also provides the ability to interact with the customer **after the transaction is complete**. The last was intended to include processes such as up-selling, database marketing, customer relationship management or any other interactions that occur between the supplier and the customer after a reservation has been made, whether in the interests of customer service or building up a continuing relationship with the customer. A key proposition of the proposed model was that each layer subsumed the lower layers; so one could not, for example, layer C (payment) without layer B (reservation).

Figure 4.1 – The Proposed Layer Approach



Thus it was envisaged that systems could be relatively basic, or could be relatively complex depending on their inclusion of subsequent layers. Together the four levels constitute a hierarchy describing the functionality and evolution of sophistication of electronic distribution channels in the hotel sector.

The panel were asked to indicate if they felt each of the proposed layers should be included in the definition of an electronic distribution system. Their responses are shown in Table 4.1.

Table 4.1 – Layers in the Definition of Electronic Distribution?

Response Percentage	**NOT** part of an Electronic Distribution system	**IS** part of an Electronic Distribution system	**Goes beyond** the requirements for an Electronic Distribution system
Layer D	0.0	59.1	40.9
Layer C	0.0	90.9	9.1
Layer B	0.0	95.5	4.5
Layer A	13.6	86.4	0.0

The overwhelming response is that electronic distribution cannot function without layers B and C with 95% and 91% of respondents respectively indicating that these should be included in the definition. These findings, in effect, answer one of the questions posed earlier, as nearly nine out of ten respondents feel that payment is indeed an essential part of the process. Interestingly a small number of respondents (13.6%) indicated that the most basic layer (Layer A), which focuses on communicating information to the customer, falls outside the boundaries of what they considered to be electronic distribution. Although the reasons for this are unclear, their freeform comments seem to indicate that they think that electronic distribution is

more than just information distribution, and may reflect a feeling that distribution systems are only effective if they also allow the client to make a booking. Simply getting the information to the customer is not enough – a mechanism has to be provided to allow the product to be booked before the process becomes that of distribution. This is effect conforms with the general definition of distribution offered in Chapter Two, as without a reservation facility, the term electronic promotion might be more appropriate.

In addition, the panel seem to consider it essential that payment is part of the process. Only a single person who indicated that layer B (booking) should be included in the definition failed to also include layer C (payment). That being said, when asked whether any of the layers were redundant, a small number of respondents pointed out a problem with the payment issue. They felt that payment should only be included if the consumer actually wanted to make the purchase in advance, but that alternative ways of securing the booking might be possible. However the majority view seemed to be that for the hotel product, advanced payment - usually through a credit card (although deposits were more common in the past) - is normally required as part of the electronic distribution process to act as a guarantee. In fact, as one respondent pointed out, how can you have a reservation without payment, as a contract is not formed without "consideration" – essentially a payment of some kind? The panel's views on the most advanced layer are not as clear. Over 40% of respondents felt that this layer (Layer D – that is Layer C plus the ability to interact with the customer after the transaction is complete) went beyond the definition of what they regard to be electronic distribution. However a small majority felt that it was appropriate and

should be included. Their views are supported by many of the freeform comments, as will be discussed below.

When asked to suggest layers missing from the model, nearly one third of respondents made at least one suggestion for parts of the process that had been omitted. Some suggestions focused on the level of detail of the model. For example, one respondent commented that confirmation of reservation and confirmation of payment had been omitted. Another pointed out the need for real-time availability, while another pointed out the need for a reporting facility. However, in each of these cases, these suggestions could be regarded as sub-components of the macro-processes included in the hierarchical model. Real time availability forms part of the information distribution layer (layer A), confirmation of reservation a component of the booking layer (layer B) and confirmation of payment part of the payment layer (layer C). Each is optional as the electronic distribution process can be successfully completed even in their absence. Other suggestions for omissions focused on the area of Customer Relationship Management (CRM), sometimes using different terminology such as database marketing, data warehousing or guest history systems – supporting the argument in favour of having layer D included as part of the definition. A small number of respondents also focused on the areas of yield or revenue management. However the question must be asked – are processes such as this an essential part of the electronic distribution process or merely complementary to that process? CRM allows detailed profiles to be built up of individual customers, and assist in one-to-one marketing. Yield management allows room rates to be manipulated in a formal way in response to changes in inventory balanced against patterns of forecasted demand and historical data. Both examples are clearly worthwhile from a business

perspective, but can electronic distribution occur without them? The answer clearly seems to be that it can, as they are not part of the three-stage information-booking-payment process identified above but *supporting* processes that can help to make electronic distribution more effective.

The hierarchical model itself did not meet with the approval of the entire panel. A sizable number of respondents (30%) indicated that they did not agree with its structure from a logical perspective. Most of the opponents pointed out that the model does not reflect the way in which electronic distribution works in real life, as each of the layers does not necessarily build on the prior layers. Information provision, customer interaction and reporting are needed at each stage of the process, and thus a single linear vertical hierarchy simply does not adequately describe the process. In addition, the pyramid structure, with its macro categories such as "information provision" or "permitting reservations" does not lend itself well to describing the electronic distribution process. To use the examples cited earlier in relation to missing components, where does the provision of real time availability fit into the layers? Is it part of layer A since it involves providing the potential customer with information, or layer B since it could be regarded as part of the process of actually making the reservation? Arguments could be made for both points of view. Similarly confirmation of reservation could be regarded as part of layer B, but cannot be undertaken until layer C where payment is received, so is it part of layer B or layer C, or part of both? How do you represent the reporting discussed above on the pyramid structure, as it needs to relate to each and every layer? An alternative might be to take a flowchart viewpoint, with electronic distribution being described in terms

of series of steps. Each element could be included as an optional or required component, which would help to aid understanding of the complexity of the subject.

4.3 Electronic Distribution Systems Available to Hotels

In the initial round of the Delphi, panel members were asked to identify the range of electronic distribution channels currently available to hotels in an attempt to develop a typology of the systems being used. Tabulation of their responses revealed twenty-five different perceived routes to the customer, with each panel member, on average, highlighting five different alternatives. Those identified by more than 15% of panel members are presented in Table 4.2. Most respondents focused on four major routes to the marketplace (GDS, CRS, direct sales over the Internet and via an Internet Travel site), indicating the extent to which these four channels dominate the hotel electronic distribution arena.

In addition to the channels presented in Table 4.2, panel members also cited a large number of other channels. The variety of these suggestions, coupled with the infrequency of their individual citation supports earlier comments about the complexity of the hotel electronic distribution arena. Given that an expert panel on hotel electronic distribution can overlook individual channels, how can hoteliers, with a broader range of roles and responsibilities, even be aware of the choices available? In addition, given their ever-changing nature, how can the latter be expected to be intimately familiar with the advantages and limitations of each one? Clearly an exhaustive list of the channels available, together with their identifying characteristics, would be of benefit.

Table 4.2
Electronic Distribution Channels Identified in the First Round of the Delphi Study.

Electronic distribution channel	Number of citations
Direct sales over the Internet	20
Global Distribution Systems	16
Hotel Central Reservation System	13
Internet via Travel Intermediary	13
Destination Management System	8
Internet via switch company site	7
Internet via hotel chain website	6
3rd party representative company	5
Teletext systems	5
Auction Web Sites	5
Interactive Digital TV	4

Two methodological problems became apparent from the findings of the initial round. Firstly, as might be expected with such a general question, responses differed greatly in terms of their focus. While the majority of respondents followed on from the definition in the previous question in terms of the scope of their answers, a small number also cited specific technologies (e.g. fax, email, Wireless Application Protocol (WAP), etc.) rather than electronic distribution channels. As Esposito points out, these are communications technologies that facilitate the electronic distribution process, rather than components of the value chain itself (Esposito 2000). Since they are enablers rather than part of the chain proper, such suggestions were removed from further consideration. Secondly, it quickly became apparent that the range of terminology used to describe the hotel electronic distribution arena is not standardised, and a variety of different terms are used to describe effectively the same

concept. While this may be as a result of the relative youth of the topic, or the rapid rate at which technologies and business models are developing, it is clear that a common vocabulary has yet to develop, even among experts in the field. This was a severe limitation as it made it difficult to develop clear unambiguous questions – one of the factors deemed necessary for the success of a Delphi Study. This challenge was overcome by including a definition of each channel component as part of subsequent rounds. These definitions were developed from various secondary sources, including the glossary of terms on the HEDNA (Hotel Electronic Distribution Network Association) website, and were supplemented with examples of leading industry systems and relevant website addresses where appropriate to further help respondents understand the differences between the routes presented.

4.3.2 Developing a Typology of Hotel Electronic Distribution Channels

Based on the findings of the first round discussed above, an attempt was made to draw up an exhaustive list of the channels of distribution currently available to hotelier to electronically distribute their product. In keeping with the objectives of the overall study, only direct to customer (i.e. B2C - Business-to-Customer) routes were targeted. Routes involving intermediaries that packaged the hotel product with other travel components (such as, for example, tour operators) were specifically excluded from consideration. However a problem was encountered in concisely and adequately describing each channel.

As was described in Chapter Two, the terminology currently used to describe hotel electronic distribution is ambiguous and does not easily permit differentiation between routes to the customer. For example, the term "GDS" is often used to

describe one method of distributing the hotel product. However GDS distribution can occur in many different ways (each with its own characteristics) depending on how the GDS is backwardly connected to the hotel and forwardly connected to the customer. It is these routes – from the hotel to the customer through various intermediary systems - rather than the facilitating systems themselves - that are important. The problem, therefore, is how to adequately describe these routes so that they can be differentiated from each other.

Table 4.3
Nodes in the Hotel Electronic Distribution Value Chain

Node	Abbreviation
Hotel	H
Central Reservation System	CRS
Travel Agent	TA
Global Distribution System	GDS
Switch Company	S
Hotel Corporate website	HW
Switch Company website	SW
Global Distribution System website	GW
Web Intermediary	WI
Destination Management System	DMS
Destination Management System website	DW
Tourism Information Centre	TIC
Representative Company	REP
Representative Company website	RW
Hotel website	W

Porter wrote frequently on the concept of the value chain – the series of partner firms through which the product flows between manufacture and sale (Porter and Millar 1985). Using this concept as a basis, a notation format was developed that uses abbreviations for each node on the distribution chain to generate a unique name for each route to the marketplace. Thus, instead of a multifaceted generic name such as GDS, a particular route can be described as, for example, H-CRS-GDS-TA-C or H-CRS-R-GDS-GW-C (for Hotel to Central Reservation System to Global Distribution System to Travel Agent to Customer, and Hotel to Central Reservation System to Representative Company to Global Distribution System to GDS based travel website to Customer respectively). Although developed in this project specifically to describe B2C hotel electronic distribution channels, such notation has the advantage of being easily extended to include B2B (Business-to-Business) channels, non-hotel channels or to take developments in technology into account. Using the list of systems suggested by the panel in round one of the Delphi, a list of the various nodes on the distribution value chain was developed for use in the study. These are presented in Table 4.3, along with their corresponding abbreviations, which for presentation reasons are used in the charts, graphs and figures in the remainder of this chapter.

Table 4.4
Proposed Hotel B2C Electronic Distribution Channels

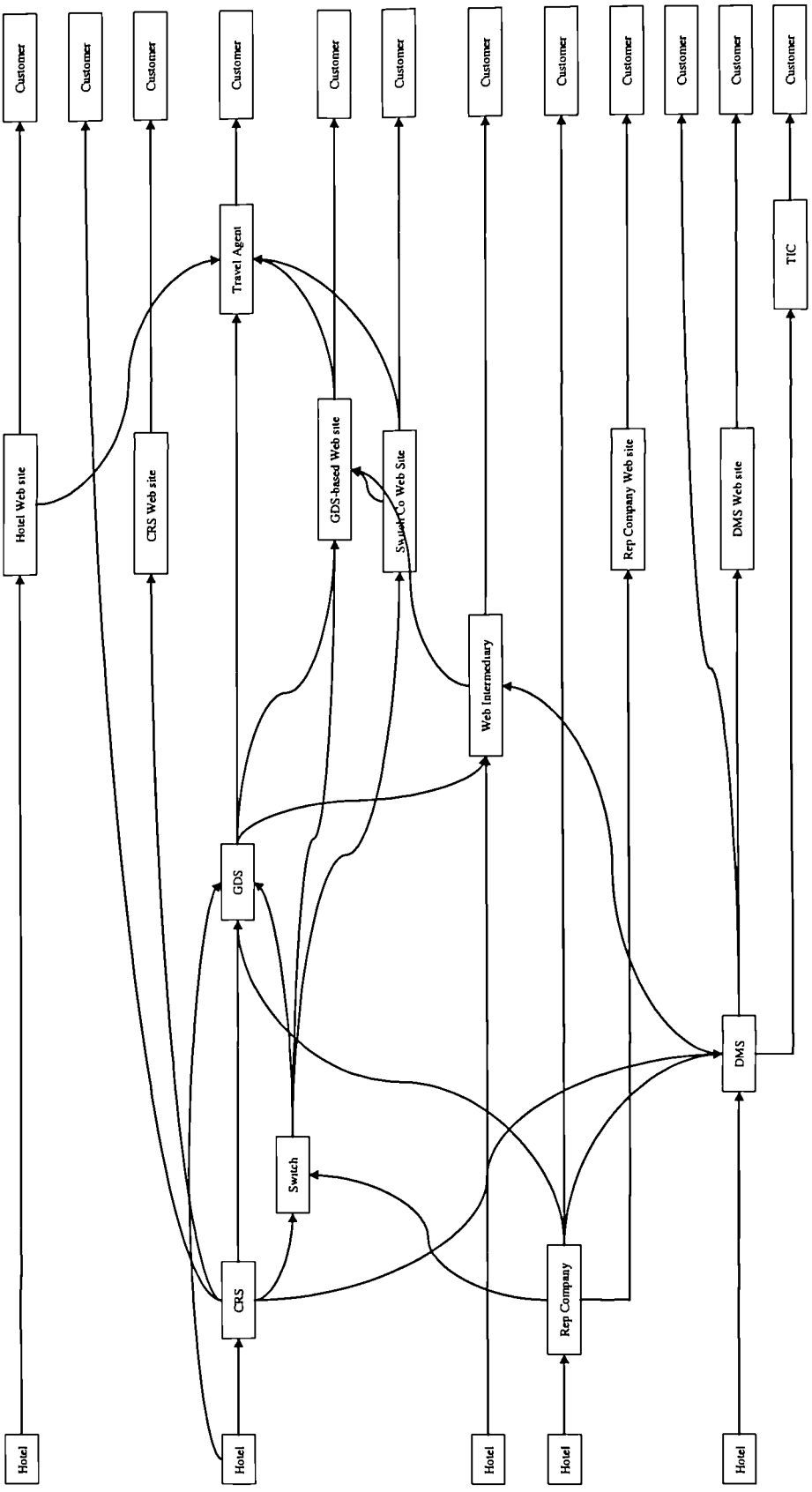
Hotel to CRS to GDS to Travel Agent to Customer	H-CRS-GDS-TA-C
Hotel to CRS to Switch to GDS to Travel Agent to Customer	H-CRS-S-GDS-TA-C
Hotel to CRS to Customer	H-CRS-C
Hotel to CRS to Hotel Company web-site to Customer	H-CRS-HW-C
Hotel to CRS to Switch web-site to Customer	H-CRS-SW-C
Hotel to CRS to GDS to GDS web-site to Customer	H-CRS-GDS-GW-C
Hotel to CRS to Switch web-site to GDS web-site to Customer	H-CRS-SW-GW-C
Hotel to CRS to Switch web-site to Travel Agent to Customer	H-CRS-SW-TA-C
Hotel to Rep Company to GDS to Travel Agent to Customer	H-REP-GDS-TA-C
Hotel to Rep Company to Customer	H-REP-C
Hotel to Rep Company to Rep Company web-site to Customer	H-REP-RW-C
Hotel to DMS to TIC to Customer	H-DMS-TIC-C
Hotel to DMS to Customer	H-DMS-C
Hotel to DMS to Destination web-site to Customer	H-DMS-DW-C
Hotel to individual hotel web-site to Customer	H-W-C
Hotel to Web intermediary to Customer	H-WI-C

Once the above notation method had been developed, the list of proposed channels was included in the second Delphi questionnaire for validation (see Table 4.4). The panel was asked to study this list and the glossary discussed earlier, and comment on whether any routes currently available had been omitted, or if any of the routes suggested were redundant with each other. Just over one-third (34.8%) of respondents felt that routes were missing from the list. As in the first round, a small number of these suggestions related to the application of specific technologies such as

WAP, Intranet, self-service kiosks or interactive TV rather than to the "route" description proposed. Others of the "omitted" routes were actually already included in the list - perhaps indicating that a textual representation is not the most appropriate way to communicate such information, and that displaying the routes in diagrammatic form might make them more understandable. In relation to duplications, a small number of respondents suggested that that there is no difference between a CRS and a representative company based system from a technological perspective and that therefore they should be combined. While this is true from a purely technological perspective, the scope of this assessment is broader, and these two routes differ significantly when their organisation, cost structure and a range of other factors are taken into consideration. Therefore, both remained in the proposed typology.

However several of the panel's suggestions correctly identified missing routes. Modifications were made to the model based on respondents' feedback and a diagrammatical representation of the hotel electronic distribution typology model incorporating their suggestions is presented in Figure 4.2. This model was validated in the final iteration of the Delphi by again asking panel members to study it and suggest routes that had been omitted or were redundant. Only one suggested change - questioning the omission of channels involving tour operators – was received in response to this validation process. As the model had been designed to exclude those channels which package the hotel product, the omission of tour operator related channels was deliberate. Therefore it can be said that the panel has reached consensus on this issue, and that a valid typology of the hotel electronic distribution channels available at the time of the research has been developed. This shows the range and complexity of the channels available to hotels at this time, demonstrates how

Figure 4.2 – A Typology of Hotel Electronic Distribution Channels

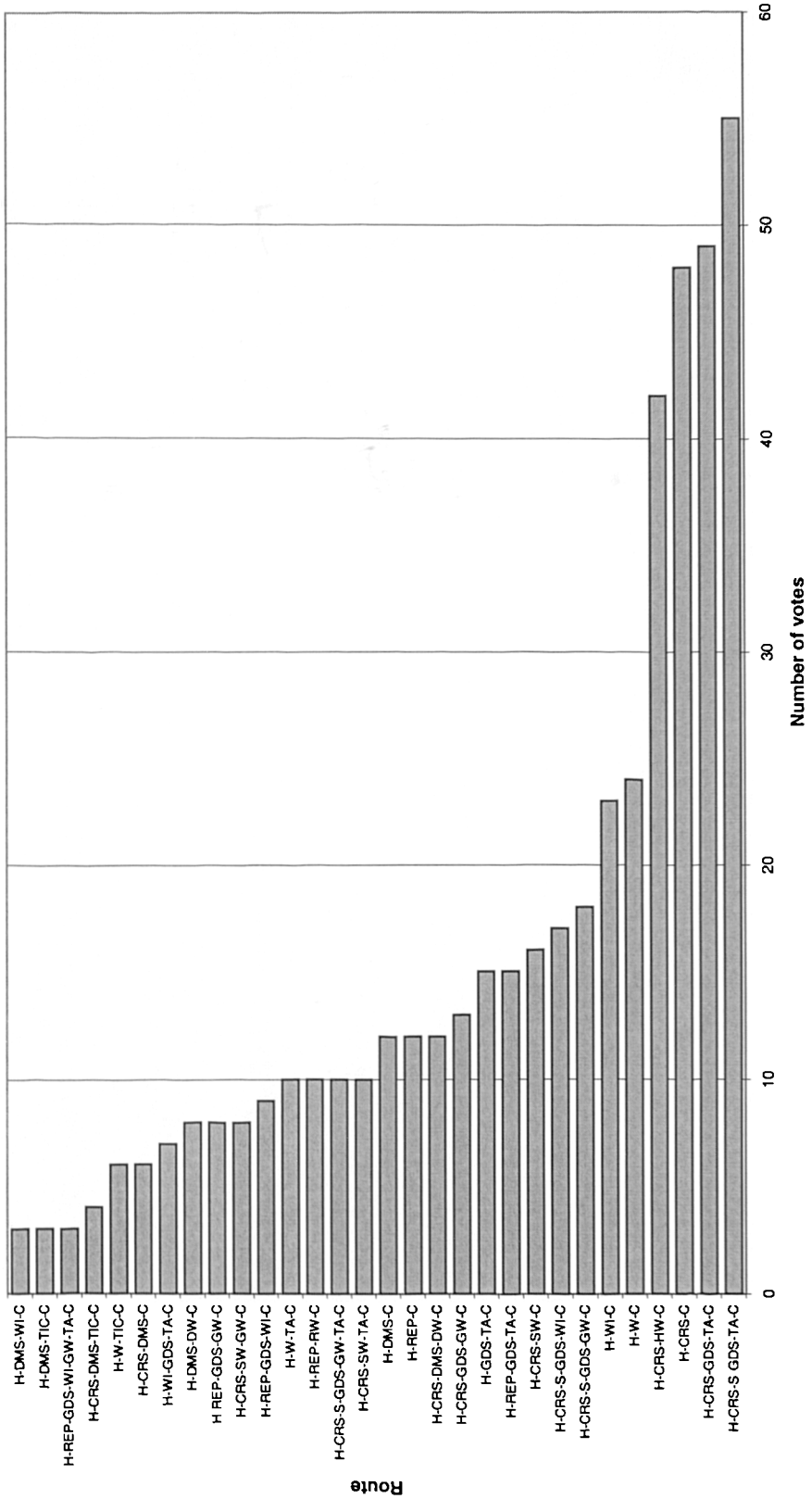


interconnected the channels have become (i.e. the "coopetition" trend noted in Chapter Two), thus highlighting the difficult choice facing anyone managing hotel electronic distribution. However, it is clear that some of these channels, while they exist, are minor in terms of their impact and even their potential. Thus the exploration of hotel electronic distribution continued with an investigation of the relative importance of each channel to hotels at the time of the research.

4.3.3 Relative Importance of Hotel Electronic Distribution Channels

While the above model shows the range and complexity of the hotel electronic distribution arena, it does not show which channels are currently most important. For that reason, in the final round of the Delphi, panel members were asked to indicate which of the channels identified they considered to have the greatest effect on hotels volume of business at the time of the research study. In answering this question, panel members were asked to focus on the use of distribution channels by chain hotels only, for the reasons outlines in the research methodology chapter. A voting system was used, with each panel member having a maximum of twenty votes. Multiple votes could be assigned to any route, and thus if a panel member considered a particular route to be important, they could assign it two, three or even more votes. The results of this voting process are shown in Figure 4.3. The votes of the panel fell into four distinct clusters. Firstly, as was expected from the literature review, the consensus of the panel was that the "traditional" electronic distribution channels are currently the largest contributors to the volume of business of the chain hotels. H-CRS-S-GDS-TA-C received the largest number of votes (55), closely followed by H-CRS-GDS-TA-C (49) and H-CRS-C (48).

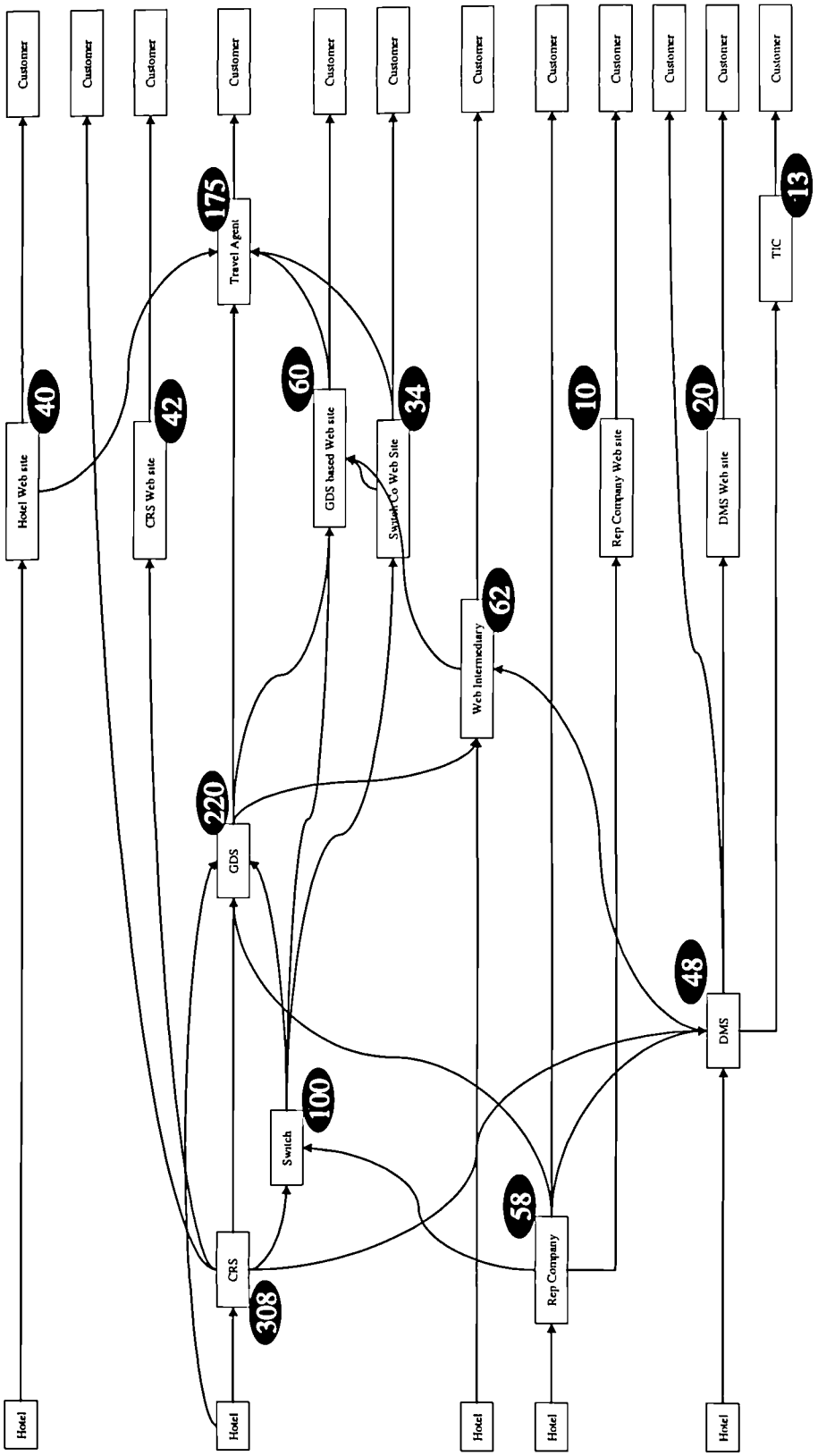
Figure 4.3 – Current Contribution of Channels to Volume of Business



As was discussed in Chapter Two, each of these routes has been in use for some time, and, although they are well proven, are characterised by a high cost of distribution. The second cluster of channels demonstrates the current importance of the Web. H-CRS-CW-C, H-W-C and H-WI-C, which received 42, 24, 23 votes each respectively, are in effect channels which uses the Web to bypass the GDS and travel agent nodes of the distribution value chain. The third cluster is also Web related. H-CRS-S-GDS-GW-C and H-CRS-S-GDS-WI-C received 18 and 17 votes respectively, and combine both the GDS node with eventual Web delivery to the customer. The remaining channels all received less than 15 votes each.

An alternative method of analysis is not just to examine the number of votes received by the routes themselves, but instead to analyse the nodes in the distribution chain included in the channels chosen by the panel. When a node is given one vote each time it is mentioned in a channel, those most important as facilitators for hotel electronic distribution can be identified. Such an analysis (shown in Figure 4.4) reveals the continued overwhelming importance of the CRS in the hotel electronic distribution strategy of the hotel chains. The vast majority of channels have their origins in the CRS (308 votes vs. 186 votes), irrespective of how they are ultimately delivered to the customer. Similarly, the analysis reveals the importance of the Web as a delivery mechanism, with 268 votes using the Web as the communications medium between the last node in the distribution chain and the customer (as opposed to 175 for travel agents, 48 for CROs and 13 for TICs). Although these votes were spread over a variety of different channels (e.g. direct website, chain website, Web intermediary and destination website), it is clear that the Web is no longer an experimental distribution medium but one whose channels are contributing significantly to the volume of business of the hotel chains.

Figure 4.4 – Relative Importance of Nodes on the Hotel Electronic Distribution Value Chain



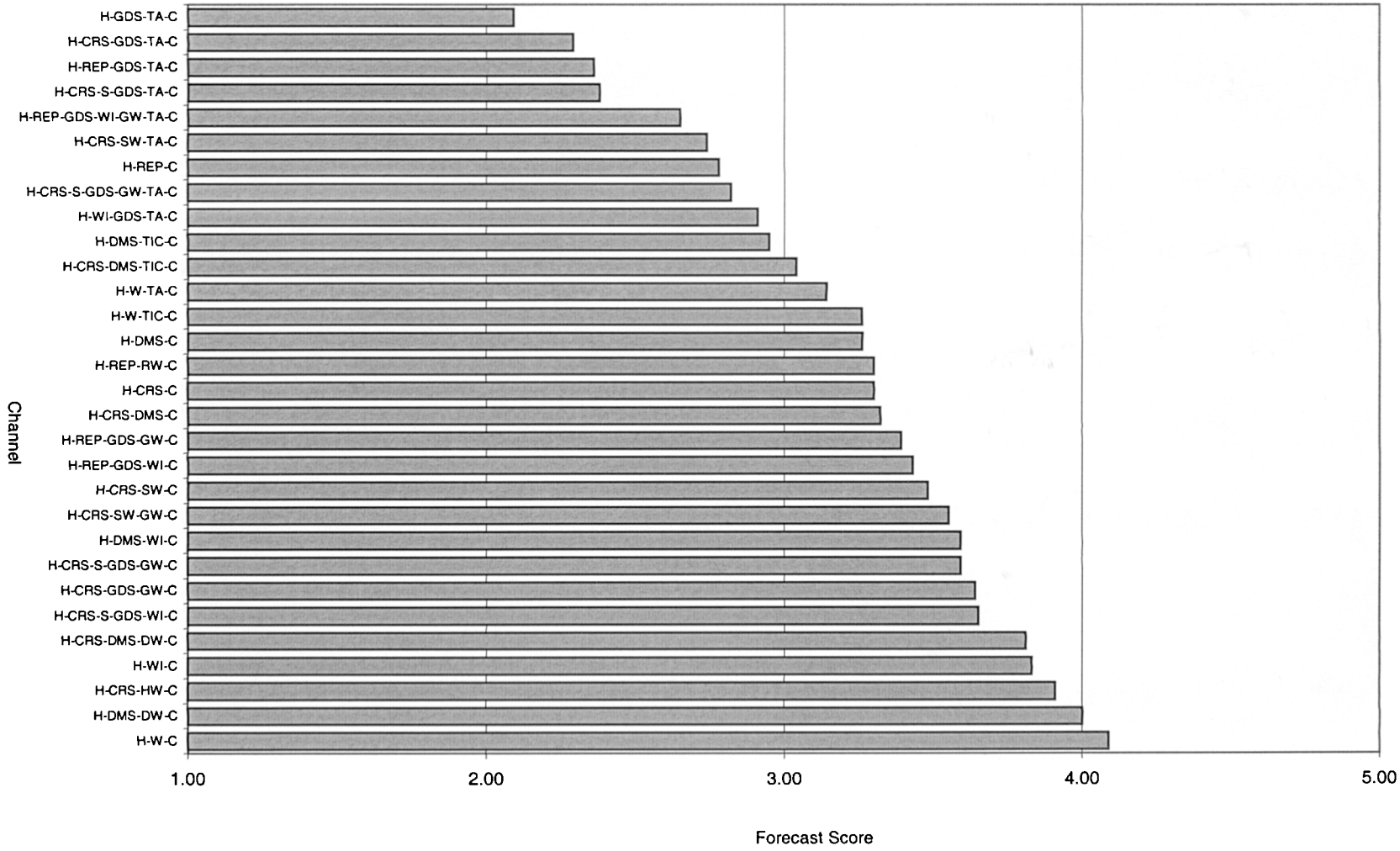
4.3.4 The Future of Hotel Electronic Distribution Channels

Although not directly requested to do so, through each round of the Delphi, many panellists felt the need to add comments focused on future scenarios rather than the present. Many pointed out that the hotel electronic distribution arena is rapidly evolving, and that certain routes are becoming less important as new ones grow. Others specifically referred to the "coopetition" trend discussed earlier. Hotel electronic distribution channels are merging, bypassing one another, and in effect both cooperating and competing with each other contemporaneously. Which channels are likely to be important in the future is clearly of interest. For that reason, panel members were asked to indicate whether they felt that each of the channels identified in the previous analysis was likely to grow or decline over the next year. A five-point scale (ranging from one being "greatly decline", through "remain the same" to five being "greatly grow") was used to measure their forecast. Their collective opinion as to the future of each channel is shown in diagrammatic form in Figure 4.5.

The positive attitude of the panel as a whole towards the future of hotel electronic distribution is immediately apparent. Few channels are in the range that indicates that the panel thinks that they will greatly decline over the next year. In fact, if a statistical analysis is performed on the overall forecast scores, the modal response is 4 and the arithmetic mean is 3.19, indicating that the panel feels that the entire range of electronic distribution channels is going to grow slightly. However, when considering such a result, one obvious caveat is necessary; such findings obviously reflect the opinion of an expert panel, all of whom are connected with hotel electronic distribution in some way and thus such a positive attitude towards the use of such systems was to a large extent to be expected.

Figure 4.5 – Future of Hotel Electronic Distribution Channels

(1 = greatly decline, 3 = remain the same, 5 = greatly grow)



Analysing the panel's mean forecast for each channel individually is also revealing. Firstly, as can be seen from Figure 4.5, with the exception of two channels, all those forecast to decline (below 3) involve travel agents as the final "node" before the customer. (The exceptions are H-Rep-C and H-DMS-TIC-C, which in fact confirms the pattern as both the representative company and the Tourism Information Centre are in effect fulfilling the role of the travel agent in this case). Secondly, all of the channels forecast to grow involve the Web as the final delivery mechanism (i.e. the Web is used as the communications channel between the penultimate node and the customer). In particular, the direct to customer routes (H-W-C and H-CRS-HW-C) received very high scores in relative terms (4.05 and 3.90 respectively). As will be discussed later in this chapter, when this high forecast is combined with the high score in terms of contribute to volume of business noted in section 4.3.3, it becomes clear that such direct channels are likely to become far more significant in the future.

While looking at the mean scores gives an indication of the group's feeling about the future of each channel, much more can be learned from examining their detailed answers, which are presented in Table 4.5. Each of the trends noted above is again apparent in this table. The forecast decline of the travel agent associated channels can be clearly seen, with forecasts of "decline" or "greatly decline" in nearly 70% of such cases. Similarly, as when the mean scores were being considered, it is the Web-based channels that receive the most positive forecasts, with H-CRS-HW-C, H-CRS-DMS-DW-C, H-DMS-DW-C and H-W-C receiving forecasts of "grow" or "greatly grow" from approximately 70% of participants. This in effect confirms the theory suggested by earlier findings – that travel agent based channels will decline to be replaced by web-based channels over the next year.

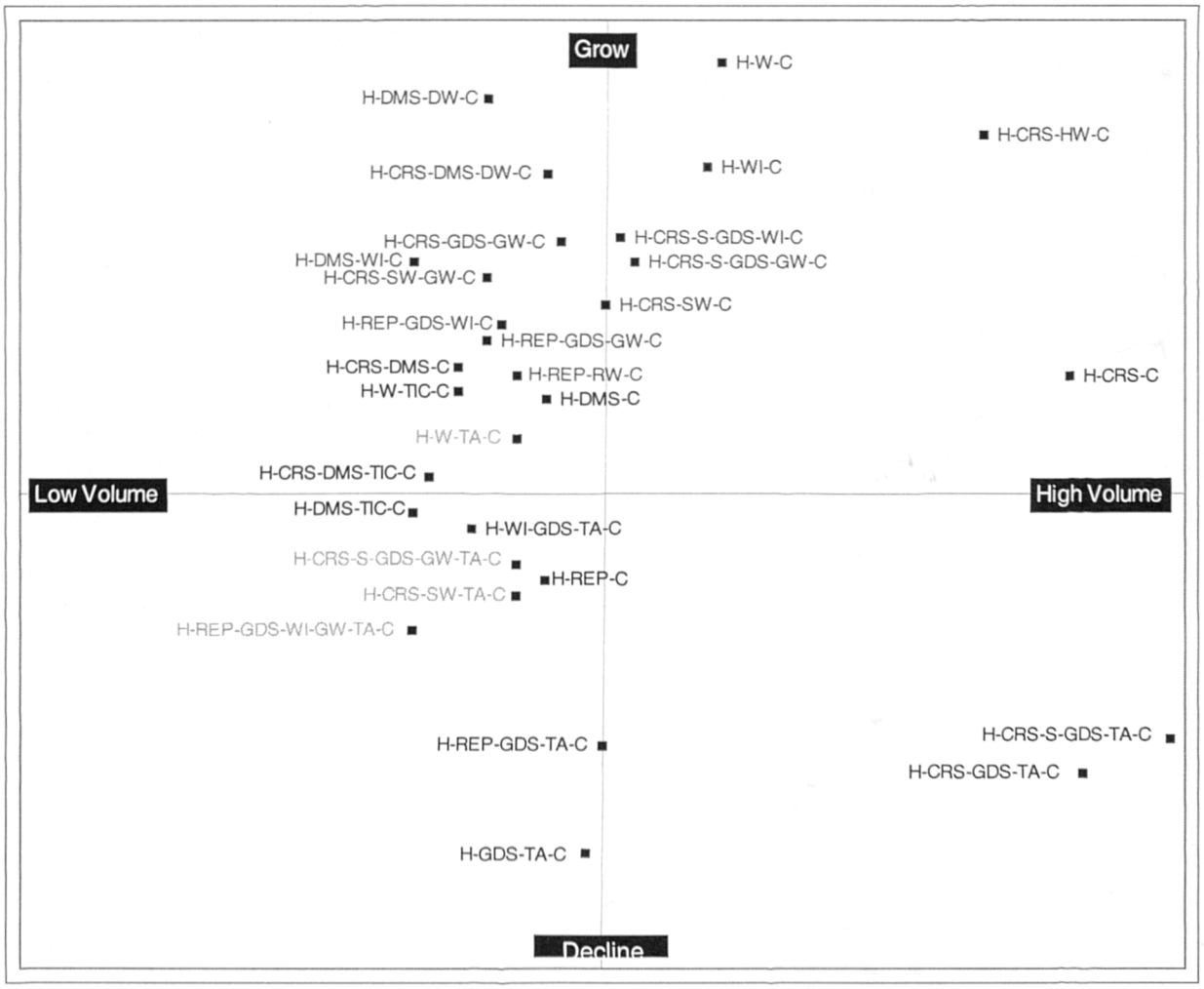
Of course growth on its own is not an indication of how important each channel will be in the future. To see this, the data on growth must be combined with the data on current contribution-to-volume discussed in section 4.3.3. Combining both sets of data allows predictions to be made as to the future importance of each channel. A matrix showing this analysis is presented in Figure 4.6. By effectively permitting the effect of volume and growth potential to be combined, the matrix allow the potential of each channels to be isolated and the channels that hotels should focus their attention on for the future can be clearly seen.

The most attractive channels are those in the top right hand quadrant, which combine a high current volume with a high forecasted growth. These include six of the Web based channels – H-W-C, H-WI-C, H-CRS-WI-C, H-CRS-S-GDS-WI-C, H-CRS-S-GDS-GW-C and H-CRS-SW-C. Of these, distribution directly to the consumer over the Web shows the highest potential. It is interesting to note that the three "highest" routes are all relatively simple – with just one or two nodes in the distribution chain. The continued importance of the hotel CRS is also reflected here. Not only is the H-CRS-C route the only non-Web related channel in this segment, but four of the other six channels in this quadrant also include the hotel CRS as their first node. Thus the importance of the CRS for hotel chain distribution is further confirmed.

Table 4.5 – Future of Electronic Distribution Channels – Detailed Scores

Route	Description	Greatly decline	Decline	Remain the same	Grow	Greatly grow		Mean	Mode	Median
1	Hotel to CRS to GDS to Travel Agent to Customer	2	15	5	2	0		2.29	2	2
2	Hotel to CRS to Switch to GDS to Travel Agent to Customer	2	14	5	3	0		2.38	2	2
3	Hotel to CRS to Customer	1	5	7	6	4		3.30	3	3
4	Hotel to CRS to Hotel Company web-site to Customer	1	1	2	14	5		3.91	4	4
5	Hotel to CRS to Switch web-site to Customer	0	5	5	10	3		3.48	4	4
6	Hotel to CRS to GDS to GDS web-site to Customer	0	1	8	11	2		3.64	4	4
7	Hotel to CRS to Switch web-site to GDS web-site to Customer	0	1	8	13	0		3.55	4	4
8	Hotel to CRS to Switch web-site to Travel Agent to Customer	0	12	5	6	0		2.74	2	2
9	Hotel to CRS to Switch to GDS to GDS web-site to Customer	0	2	6	13	1		3.59	4	4
10	Hotel to CRS to Switch to GDS to GDS web-site to Travel Agent to Customer	2	7	6	7	0		2.82	2	3
11	Hotel to CRS to Switch to GDS to Web intermediary to Customer	0	2	6	13	2		3.65	4	4
12	Hotel to CRS to DMS to Customer	0	5	3	11	0		3.32	4	4
13	Hotel to CRS to DMS to Destination web-site to Customer	0	1	5	12	3		3.81	4	4
14	Hotel to CRS to DMS to TIC to Customer	0	7	9	6	1		3.04	3	3
15	Hotel to Rep Company to GDS to Travel Agent to Customer	1	14	5	2	0		2.36	2	2
16	Hotel to Rep Company to Customer	0	11	7	4	1		2.78	2	3
17	Hotel to Rep Company to Rep Company web-site to Customer	0	3	10	10	0		3.30	3	3
18	Hotel to Rep Company to GDS to GDS web-site to Customer	0	3	8	12	0		3.39	4	4
19	Hotel to Rep Company to GDS to Web intermediary to Customer	0	3	9	9	2		3.43	3	3
20	Hotel to Rep Company to GDS to Web intermediary to GDS web-site to Travel Agent to Customer	1	10	8	4	0		2.65	2	3
21	Hotel to DMS to TIC to Customer	0	8	7	7	0		2.95	2	3
22	Hotel to DMS to Customer	0	6	6	10	1		3.26	4	3
23	Hotel to DMS to Destination web-site to Customer	0	1	2	16	4		4.00	4	4
24	Hotel to DMS to Web intermediary to Customer	1	1	5	14	1		3.59	4	4
25	Hotel to individual hotel web-site to Customer	0	2	2	11	8		4.09	4	4
26	Hotel to individual hotel web-site to Travel Agent to Customer	1	5	7	8	1		3.14	4	3
27	Hotel to individual hotel web-site to TIC to Customer	0	5	9	7	2		3.26	3	3
28	Hotel to Web intermediary to GDS to Travel Agent to Customer	0	8	10	4	1		2.91	3	3
29	Hotel to Web intermediary to Customer	0	3	3	12	5		3.83	4	4
30	Hotel to GDS to Travel Agent to Customer	3	16	3	1	0		2.09	2	2

Figure 4.6 – Matrix Analysis of the Future of Hotel Distribution Channels



The second most attractive sets of channels are those in the upper left hand quadrant, and those in the bottom right hand quadrant. The former do not currently have a high volume, but are forecast to grow in the future and thus warrant attention. These include a large number of channels, including eight that use the Web as their delivery mechanism to the customer. The quadrant also includes all of the channels based on Destination Management Systems, highlighting the expert panel's opinion as to the potential of channels using this node for the future. Although the channels that use a Destination website as the penultimate node are best positioned in the quadrant (H-DMS-DW-C and H-CRS-DMS-DW-C), those that interface with other systems (H-DMS-WI-C) or use TICs to interact with the customer (H-DMS-TIC-C and H-CRS-DMS-TIC-C) are also present, albeit in more unfavourable positions. The future potential of Web intermediaries and GDS based websites is also highlighted, with a cluster of five channels using these nodes as the delivery mechanism appearing in favourable positions. Lastly, a cluster of channels involving representative companies can also be identified (H-REP-GDS-WI-C, H-REP-GDS-GW-C and H-REP-RW-C). However analysis of these channels, compared with the other representative company based channels that appear in other segments, shows that the common denominator underlying their potential is that the Web is used as the delivery mechanism to the customer. Only two channels appear in the bottom right hand quadrant, which represents high current volume but a forecast to decline in the future. Not surprisingly, these are the two "traditional" hotel electronic distribution channels H-CRS-GDS-TA-C and H-CRS-S-GDS-TA-C. The current importance of both of these routes for hotel chains is unquestionable. However, in the opinion of the expert panel, they will decline in coming years, and thus hotel companies should adopt a switching strategy, and try to replace them with more attractive channels.

The channels shown in the bottom left hand quadrant are the least attractive as they combine both a low current importance rating with a low growth potential. Routes in this quadrant include practically all those that use travel agents as their delivery mechanism to the customer. In fact, every channel that is placed in this quadrant, with a single exception, fits this description, suggesting that the travel agent as a method of distribution has a limited future. Even the single exception (H-REP-C) fits this pattern, as in this case the Representative Company is fulfilling the role of the travel agent as was explained above in the earlier discussion of the mean forecast scores. Thus the matrix analysis supports many of the theories developed earlier. It has helped to confirm the role of the hotel CRS as the engine behind much of hotel electronic distribution. It has confirmed suggestions from the literature as to the future demise of the travel agent, as practically all of the channels forecast to decline have a travel agent node (coloured blue). Similarly, it has demonstrated the effect of the Web and its power as a determinant of future growth. As can be seen from the matrix, all channels that feature a Web-related node (coloured red) are forecast to grow. The only exceptions to this pattern are those that feature both a travel agent node and a Web-related node (coloured green). Three of these are in the low volume / decline quadrant, but it can be speculated that they are placed much higher in the matrix than would be the case in the absence of their Web node, as the negative influence of the travel agent node is being balanced by the potential of Web distribution. Similarly one travel agent route is at the bottom of the low volume / high grow quadrant, but its growth is perhaps being restricted by the travel agent node. Based on the data collected, two future scenarios seem clear. Channels involving travel agents will decline over the next year, while those involving the Web as the last communications media with the customer will grow.

4.4 Evaluating Hotel Electronic Channels of Distribution

As has been shown above, navigating the maze of electronic distribution channels currently available to hotels is complex. Furthermore, as was discussed in Chapter Three, differentiating between alternative channels and knowing which to use for a particular property is clearly a difficult task. As a result, a set of evaluation criteria that could be used to assess such channels would clearly be of benefit. To facilitate this, a further objective of the Delphi study was to identify the range of factors that should be taken into consideration when evaluating an electronic channel of distribution for use with the hotel product. The development of this list was a multi step process, as is described below:

4.4.1 Developing a List of Potential Adoption Factors

In the initial round of the Delphi study, panel members were asked to suggest how they felt that hotel electronic channels of distribution might be evaluated. Open questions, phrased in a manner as to encourage respondents to nominate as many techniques as were appropriate, were used, with the intention of compiling their suggestions into an initial list of possible evaluation methods that could subsequently, through the Delphi methodology, be fed back to the panel for validation. As might be expected, a large amount of qualitative data was collected in response to the initial question. The underlying principles of content analysis, as described in Chapter Three, were used to analyse this data and establish an initial list of evaluation criteria. Panel members were asked to suggest the factors that should be taken into consideration in two different situations – when a channel is being considered for adoption for the first time (dubbed "adoption factors"), and when the ongoing use of a

channel is being evaluated (dubbed "continuation factors"). Both situations are discussed separately below.

4.4.1.1 Factors To Be Considered When Adopting A Channel

Initially the panel was asked to suggest the factors that should be taken into account when evaluating the use of a hotel electronic channel of distribution for the first time. 164 separate factors were suggested in response, which were grouped into six broad categories as shown in Table 4.6. These categories developed arbitrarily from the content analysis of the data, as were each of "in vivo" codes used to discuss the data below. The categorisation was performed to facilitate discussion at the initial stages of the analysis, but was not presented to the Delphi panel in subsequent Delphi questionnaires to avoid bias.

Table 4.6 – Initial Citations of Evaluation Factors

Category	Occurrences
Financial Issues	40
Marketing Issues	35
Management Issues	35
Operational Issues	22
System Provider Issues	17
Technical Issues	15

Financial Factors

Financial factors were the most commonly cited. This category included suggestions that focused on the cost or revenue aspects of using a channel. Most respondents made general comments related to the potential financial performance of channels (35). Eleven pointed out that the overall cost of

using the system needed to be taken into consideration. Five specifically mentioned transaction costs, with set-up costs being mentioned by a further three. On the opposite side of the profitability equation, six panellists stressed the importance of assessing the potential volume of transactions that use of the channel might bring, with two others focusing on the amount of revenue that would potentially be generated. Only eight respondents explicitly combined these factors together by mentioning that the hotel should balance costs against benefits or examine the possible effect of using the channel on profitability. The open nature of the question was clearly a problem in terms of analysing the panel's responses. While some answers were very specific (e.g. transaction cost vs. set up costs), the majority were too general in nature (e.g. cost), and thus limited in their usefulness. Given that financial factors were the most frequently cited, the issue was thought to be important and therefore was further investigated in the second round of the Delphi.

Marketing Factors

Marketing factors were also mentioned frequently (33). Foremost among these suggestions was the potential of the channel to service existing target markets (21), both in terms of market segment and geographical spread, while the channel's ability to address new customers was cited far less often (7) – perhaps indicating that the panel see electronic distribution channels as a method of doing business with their current customers rather than as a way of addressing new ones. Other marketing issues included that the focus of the hotel (3) (i.e. business vs. leisure), and the type of hotel (2) (city centre, resort, etc.). While the latter two concepts are acknowledged to be important in that

they help determine the target market of the hotel, they are at the same time attributes of the property itself rather than the distribution channel and thus were eliminated from further consideration in this study.

Management Factors

Issues that focused on the *strategic / tactical* running of the firm were grouped into the management category. The most commonly cited issue here was the effect that using the channel would have on the "brand image" of the hotel (8). As with the cost issue discussed above, the precise meaning of brand image was unclear, and thus the panel were asked to clarify how they felt that the use of an electronic distribution channel could affect a hotel's brand image in the second round of the study. Other suggestions in the management category included competitive positioning, i.e. "being available where customers expect to find you" (5), and the effect that using a new channel would have on existing customer relationships (4). This latter point may well be related to another factor – the effect on existing channels of distribution (3) – clearly showing that the choice of whether to use a channel needs to be considered within the broader framework of existing business relationships. Competitive positioning is also suggested by some of the other criteria cited, in particular by considering whether there are competitors already present in the channel (3), what alternatives are available (3) and the ability to spread risk (2). Overall, the suggestions in this category seemed to imply that the choice of whether to use a channel or not is not purely a financial one, but one that must be considered in light of the organisation's overall business strategy.

Operational Factors

Issues related to the day-to-day running of the distribution channel were placed in the operational factors category (20). Primary among these was that the system should be easy to work with from a technical perspective (8), and that the number of databases used to support electronic distribution channels should be minimised – preferably to just a single one (6). Less frequently cited suggestions focused on back office issues, such as the overall level of automation of the process, control issues and reporting issues.

System Provider Factors

Issues relating to the provider of the distribution channel were the next most frequently cited category. This seems to indicate that at least some of the panel perceive electronic channels of distribution to be associated with particular companies rather than seeing them as generic systems. This is surprising, as this viewpoint was not apparent in earlier questions where respondents used generic terms rather than specific system names to identify the electronic channels available to hotels. Primary among the issues identified was the reputation of the company providing the service (11), with their level of independence (3) and level of understanding of the hotel sector (2) also mentioned.

Technical Factors

Technical issues were the least frequently cited category. Speed – both transaction speed (2) and update speed (2) - were cited, as was data quality (4), security (3) and a variety of other minor factors.

Thus, the first round of the Delphi helped to generate a list of possible criteria that could be used to evaluate hotel electronic channels of distribution. The range and variety of the criteria suggested demonstrates the complexity of the decision facing anyone considering the adoption of a channel. Financial factors are clearly important, as are issues related to the market addressed by the channel. Management, operational, system provider and technical issues were cited far less frequently, but still clearly need to be taken into account. Such a pattern seems to suggest that evaluating the use of hotel electronic distribution channels is similar to many other business decisions – it needs to be evaluated based on its cost and the markets that it will serve. How it works, and the technology driving it, while important, do not appear to be of major concern. This viewpoint seems to be supported by the content analysis, which revealed far more cohesion in the responses to the first two categories. Put simply, not only were there more responses in these categories, but there was less variety of response. However, although financial and marketing considerations are shown to be important, they are by no means the only criteria that need to be taken into account. Clearly the evaluation process is a multi-faceted one, and not one that should be undertaken using financial and marketing criteria alone. A broader based evaluation model is clearly needed – one that effectively combines each category of criteria to help identify the most appropriate channels.

4.4.1.2 Clarifying the Cost and Brand Issues

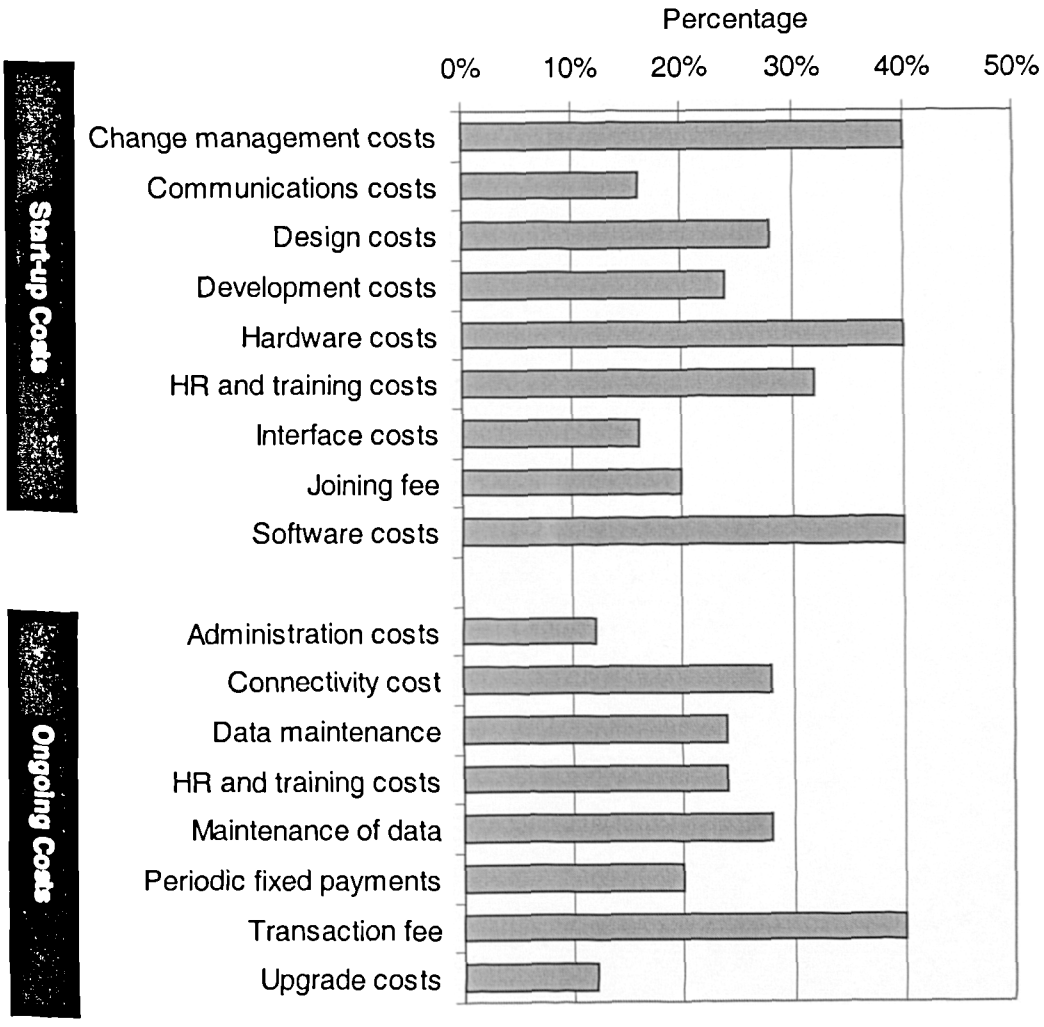
As was discussed above, the meaning of two terms frequently cited by panel members in their responses to the first round of the Delphi study was not immediately apparent. To clarify exactly what costs are associated with using an electronic distribution

channel, and the meaning of the term "brand image", panel members were asked specific questions related to both of these issues in the second round of the study.

The Cost Issue

Panel members were asked to explain in detail the costs associated with using a particular hotel electronic distribution channel. Their answers were once again analysed using content analysis, and categorised into two groups: start-up costs and ongoing costs. The frequency of their responses are shown in Figure 4.7 and discussed below.

Figure 4.7 – Citation of Electronic Distribution Costs



The most commonly cited costs at the start-up stage were those involving hardware (40%) and software (40%). Electronic distribution systems, by their very nature, involve the use of computerised systems, and the infrastructure necessary to run these systems must be acquired. Also related to infrastructure were interface costs (16%). Electronic distribution systems can be (although they are not always) connected at two levels – to systems at the individual hotel and to the electronic distribution channel itself. To allow this interconnectivity, interfaces need to be developed or purchased to permit data to flow in both directions, giving rise to an interface cost. After infrastructure related issues, the next most commonly cited start up costs were those involved with designing the system (28%). These include the costs associated with conceiving the system, searching for existing suitable systems in the marketplace, consultants' fees, systems specification, and insuring that the system will conform with industry standards in terms of connectivity. Closely allied with these are the development costs, which include programming, testing and content creation (particularly with content rich channels such as websites) and the cost of migrating existing data onto the new system (24%). Joining fees or other initial payments were also cited as adding to the cost of starting to use a particular channel (20%), as were two human resources issues – the cost of training staff to use the new system, and the cost of hiring or redeploying appropriate staff to run the system (32%). Lastly the issue of change management generates costs. This includes the cost of managing the change itself (40%), as well as the loss of revenue / goodwill associated with changed procedures and confusion among customers and staff. To overcome this, communication may need to be improved, both externally with customers and internally with staff, both of which would increase the cost of starting to use a channel (16%).

The most commonly cited ongoing costs were the transaction fee and / or commission associated with using a particular channel (40%). However, unlike most of the other ongoing costs, such fees only occur when a reservation has been made. All of the other costs identified in this section must be paid irrespective of the number of reservations that occur through the channel. The next most commonly identified ongoing costs were connectivity costs (28%) and those associated with maintaining data on the system (24%). Electronic distribution systems need to be connected to the outside in some way, which generates an ongoing telecommunications or network charge. Furthermore, the data on the system needs to be checked for accuracy and modified on a regular basis, thus giving rise to a data maintenance charge, which could be internal or external. Also allied to this are a variety of other administrative costs associated with making the system run efficiently (12%). Several of the costs referred to in start up costs were cited again. For example, hardware and software may need to be upgraded or changed on a regular basis because of today's rapidly changing technological environment (12%). Similarly training costs again need to be considered, as a result of the high level of labour turnover in the hotel sector (24%). Lastly, some electronic distribution channels require hotels to pay a periodic membership fee, have fixed minimum transaction fee levels or demand special (i.e. lower rates) to be included on their system (20%). These in effect further increase the ongoing costs of using that particular channel.

The Brand Image Issue

As with the cost issue discussed above, panel members were asked to explain in detail how they felt that the adoption of an electronic distribution channel could affect the

brand image of a hotel. Their responses revealed both the complexity and importance of the issue, with a variety of different facets of the issue emerged from the analysis of respondents' comments. At the same time, it was clear even from an initial analysis that the issue was beyond the scope of the limited time and resources available in this project to examine it in detail. Initial thoughts on the subjects are presented below, but it is obvious that these only begin to address the importance of the issue, and that it deserves more dedicated and in-depth study to assess its implications for distribution strategy.

Primary among the facets of brand image identified was the importance of quality of representation. Whatever channel is being used, it must present the property or company in the best way possible. Adequate use must be made of the channel's capabilities. Be it the text-based interface of the GDS or the multimedia capabilities of the Web, poor use of the available facilities can damage the hotel's image, while good use of the medium can enhance it. The Web provides new and enhanced opportunities to reinforce branding, which, according to the panel, is not being exploited to its full capacity by many hotel companies. Another facet was control over the brand. This has become particularly relevant as a result of the growth of the various Web intermediaries that distribute the hotel's product, often without their expressed consent or sometimes even their knowledge. Brand image is affected, as even though the customer is interacting with an intermediary, their perception is that they are interacting with the brand itself. Therefore the ability of channel providers to meet the customer's expectations is extremely important. Many respondents felt that hotels need to be able to approve, or even control, data relating to them prior to publication on such sites. If not, the perception of their brand is at risk of being

abused or misrepresented. Brand association was also mentioned. A property's image can be positively affected by the other properties distributed by a channel. For example, being listed on a website that only includes luxury properties could raise the customer's perception of the property. However this brand association can also work in the opposite direction, if the hotel is found listed alongside others that are perceived negatively by the customer. Lastly, in many cases, it may even be that it is the brand of the channel, rather than the brand of the individual properties that has become important. Many of these online wholesalers are very visible, and in effect are directly competing with hotel's own brands.

Clearly the issue of brand image as it relates to hotel electronic channels of distribution is fascinating, as either using or not using a particular channel can have both positive and negative effects on the hotel's brand. As one respondent pointed out "the public and industry perceptions of a particular channel or vehicle can enhance or damage a brand's image. Therefore a hotel or chain must associate with or take advantage of those that complement its overall strategy".

4.4.2 Relative Importance of Adoption Factors

While the first round of the Delphi study helped develop a potential list of criteria for use in evaluating hotel electronic channels of distribution, it revealed neither the level of agreement of the expert panel with their suitability nor their degree of relative importance. Although some conclusions might be drawn from how often each factor was mentioned by individual panel members, it is also clear that frequency of citation is not a measure of perceived importance. For that reason, the list of the evaluation factors suggested by three or more individuals was fed back to the expert group for

validation. In addition to being asked to identify errors, omissions and duplications, the panel was also requested to rate each factor in terms of its importance in evaluating the adoption of a hotel electronic channel of distribution. While the list of factors was grouped to facilitate discussion in the summary document sent to the panel, they were presented in alphabetical order in the questionnaire to minimise bias. Furthermore the list was presented in ascending order on 50% of the questionnaires and descending order on the remainder to minimise the effect of questionnaire burnout. ANOVA indicated no significant difference (at the 95% confidence level) in the mean scores from the two groups, indicating that both groups completed the questionnaire in a similar fashion. A five point continuous scale, from "1" meaning that the factor in question could be ignored to "5" meaning that consideration of the factor was essential when evaluating hotel electronic distribution channels was used to measure perceived importance, and the panel's mean ratings are presented in Table 4.7.

The first round of the Delphi had suggested that the use of a channel should primarily be evaluated based on factors such as cost, the markets it would address and how it would fit into the overall strategy of the organisation. Financial issues were the most frequently cited, followed jointly by marketing and management issues, then (in descending order) operational, system provider and technical issues. Thus how the system would work in practice, and the technology behind it, were not mentioned as frequently and thus were thought to be less important to the panel.

Table 4.7 – Evaluation Factor Ranking – Adoption of a Channel

(1 = Ignore to 5=Essential)

Factor	N	Mean	Standard. Deviation	Skew	Standard. Error	Technical	System Provider	Management	Operational	Marketing	Financial
Speed at which transaction can be completed	23	4.22	.80	-.427	.481	x					
Speed at which information and rates can be updated	23	4.17	.78	-.324	.481	x					
Reputation of the provider of the channel	23	4.09	.79	-.162	.481		x				
Initial capital cost	24	4.08	1.02	-.718	.472						x
Security of the channel	23	4.04	1.02	-.654	.481	x					
Traffic levels (number of visitors, lookers, hits)	23	4.00	1.09	-1.162	.481	x					
Integration with existing electronic channels from a data maintenance perspective	24	4.00	1.06	-1.184	.472				x		
Operational ease of use from the hotel's perspective	23	4.00	.90	-.807	.481				x		
Potential of channel to open up new market segments	23	3.96	.98	-1.192	.481					x	
Effect on existing customer relationships	24	3.92	.97	-.437	.472					x	
Effect of using channel on brand image	24	3.75	1.15	-.210	.472					x	
Transaction cost	23	3.74	.96	-.089	.481						x
Potential of channel to address current market segments	23	3.70	1.33	-.654	.481					x	
Joining or introduction fee	23	3.57	1.16	-.555	.481						x
Presence of competitors in the channel under consideration	23	3.57	1.34	-.584	.481					x	
Capability to provide management information	24	3.54	1.28	-.369	.472				x		
Effect on existing channel's of distribution	24	3.46	.98	-.483	.472			x			
Effect on room rate	24	3.42	1.25	-.452	.472						x
Ability to individually recognise customers	24	3.29	1.30	.079	.472			x			
Availability of alternative electronic channels	24	3.25	1.33	-.259	.472			x			
Achieved volume of transactions	23	2.96	1.30	.324	.481						x
Independence of the provider of the channel	24	2.96	1.33	.322	.472		x				
Forecast revenue from channel	24	2.96	1.43	.177	.472						x
Achieved revenue from channel	24	2.57	1.48	.146	.472						x
Forecast volume of transactions	23	2.57	1.25	.570	.481						x

However, when respondents rated the factors in terms of their importance, practically a converse pattern emerged. Technical factors in particular were rated as being some of the most important factors to be taken into account when considering the adoption of a channel. The majority of the operational and system provider issues similarly rated highly. In contrast, most of the financial factors were rated as being least important. In particular, those that relate to the revenue side of the financial equation (e.g. containing words such as "revenue", "transactions") scored particularly badly. Those related to the cost side of the equation did not score as poorly, with unsurprisingly, "initial capital cost" received a relatively high ranking, reflecting its importance when first considering the adoption of a channel. The converse pattern continued with both marketing and management issues, both of which were frequently cited in the initial round but received relatively low mean scores when panel members were asked to rank their importance. Only two system provider issues remained in the analysis, with one receiving a high and the other a low mean score.

Despite some low relative rankings, it must be pointed out that practically all of the issues suggested in the proposed list were seen as being important by the panel. The lowest scoring factor – forecasted volume of transactions – had a mean score of 2.57, which is still high indicating that it is nevertheless important – just not as important as some of the other factors identified. If the mid-point on the importance scale were used as a cut-off point, the effect would be to eliminate five of the factors – four of which would be financial! However, the overall high level of scores, taken together with the fact that few respondents chose to make suggestions for factors that should be added or removed, seems to indicate that the correct evaluation factors for the adoption of electronic distribution systems have been identified. However the consistently high scores do make

it more difficult to distinguish the key decision factors. For that reason, an alternative method was used in the final round in an attempt to identify the factors most important for the decision making process.

This "reversal" of findings discussed above is a divergence from both the findings of the initial round and the evaluation criteria appearing in contemporary literature and discussed at the end of Chapter Two. In the literature, most authors focus on using financial techniques such as ROI, or strategic analysis methods such as competitive positioning matrixes, as evaluation methods. However analysis of the findings of the Delphi study has revealed that the expert panel considers a much broader range of factors, and in particular, a large number of operational issues, to be important. Such findings cannot be explained by differences in the composition of the respondent groups, as these were essentially the same in both cases. A possible explanation may be that while the panel believes that a wide range of issues should be taken into consideration when evaluating an electronic channel (reflected in the large number of suggestions for possible factors received in the initial round), it is how the system will perform in practice that should be the key deciding factor in its adoption – hence the emphasis on technical and operational factors when asked to rank their importance. Given the implications of such a finding, the issue was addressed again in the final round of the Delphi for validation.

4.4.3 Validating the Adoption Factors

Even though the findings of the second round indicated that the panel had more or less reached consensus, the conclusions that could drawn from the resulting data were quite different to what had been anticipated from the review of the literature and the findings of

the initial round of the study. For that reason, it was thought important to revalidate these findings and confirm their acceptability to the expert panel. This was achieved by presenting panel members with a summary of the findings of the second round, along with another questionnaire focused on revalidating the findings as will be described below. Initially a redraft of the list of proposed evaluation factors had to be considered. During the second round of the Delphi, respondents had been asked if any evaluation factors had not been included in the proposed list. Approximately one quarter of respondents suggested additional evaluation factors, although the majority of these were existing factors phrased in a different manner. The suggestions were also cross-referenced with those from the initial round of the study, but no overlap was found and thus no additional factors were added for consideration in the subsequent round. A small number of panellists thought that certain factors were redundant. Their comments focused on the fact that when the system is being initially considered, there is no achieved revenue or achieved volume of transactions, and therefore these factors should be excluded from the adoption list. As these points were valid, they were removed from the list presented in the final round.

The updated list was presented to the panel as part of the final Delphi questionnaire, along with the mean importance score calculated for each factor in the second round. Panel members were asked to identify the factors that they felt were most important when evaluating the adoption of an electronic distribution channel for the first time. As in a prior question, a voting system was used, with each panel member being given a limited number of votes and allowed to assign multiple votes to those factors that they thought most important. This voting process forced respondents to prioritise and thus helped to identify the most important factors. Instructions were also included informing them that

they should either take the group's mean importance score into account in their votes, or ignore it, depending on the strength of their personal expert opinion, thus following the Delphi philosophy of allowing prior rounds to influence panel members answers. An analysis of the results of the process is shown in Table 4.8.

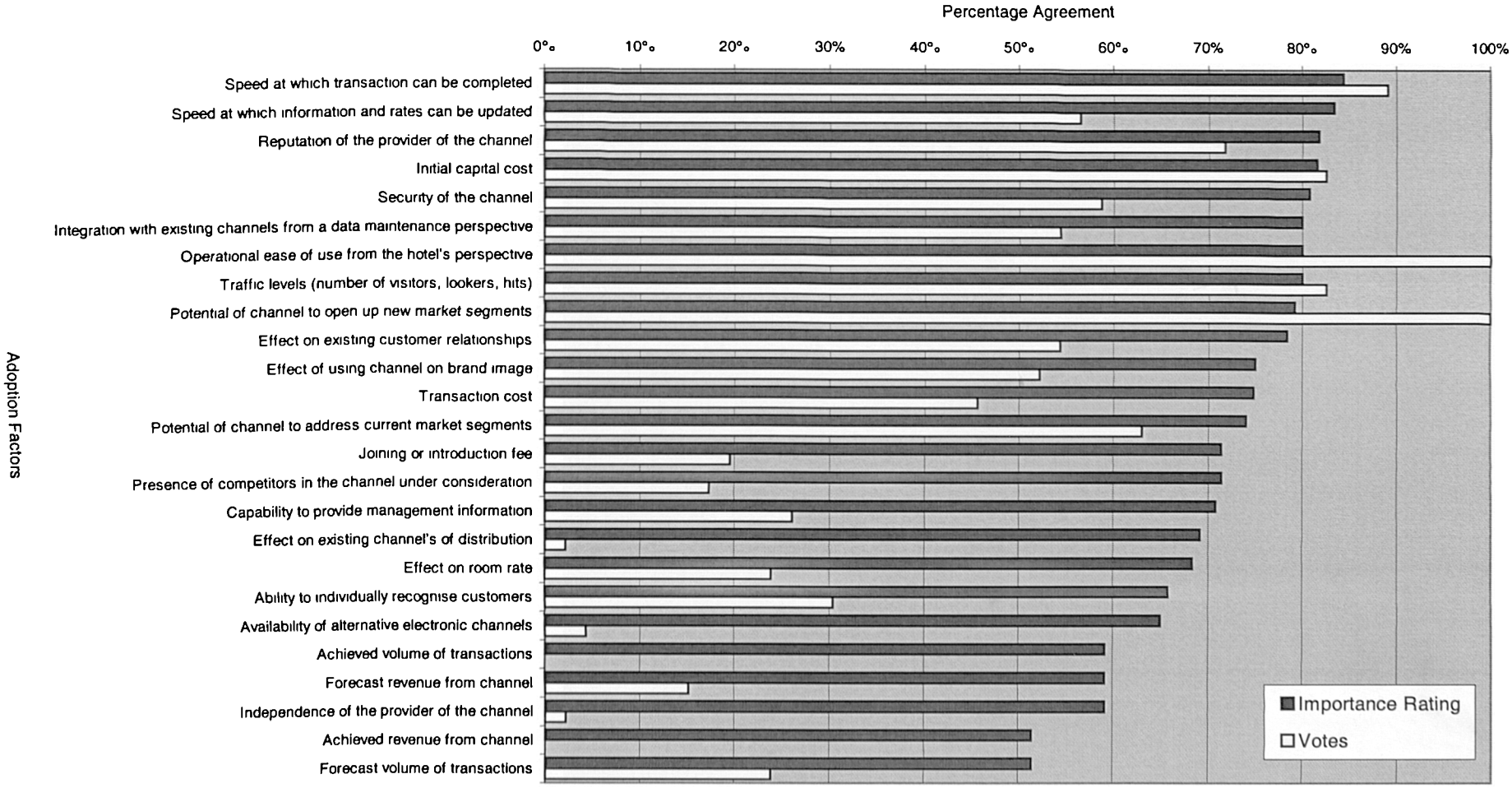
The results of the third round verify and reconfirm many of the theories developed earlier. It is clear that in the opinion of the expert panel, operation and technical issues should be at the forefront of the factors taken into consideration when evaluating the adoption of a hotel electronic channel of distribution. "Operational ease of use" received the largest number of votes (46), closely followed by "Transaction Speed" (41) and "Traffic levels" (38). Both of the other technical factors (security (27) and update speed (26)) received a relatively high number of votes. Similarly, one of the operational factors "Integration with existing channels from a data maintenance perspective" received 25 votes. As in round two, a single factor from each of the other categories also was felt to be important. In the financial category, "Initial capital cost" received the highest number of votes (38), confirming its importance in the adoption decision. Similarly, in the marketing group "Potential to open up new market segments" received 46 votes, demonstrating that the channels potential must also be taken into account. Lastly, in the system provider group, the "reputation of the system provider" is thought to be important, receiving 33 votes.

Table 4.8 – Important Adoption Factors

Factor	Category	Importance Rating	Votes
Speed at which transaction can be completed	Technical	4.22	41
Speed at which information / rates can be updated	Technical	4.17	26
Reputation of the provider of the channel	System Provider	4.09	33
Initial capital cost	Financial	4.08	38
Security of the channel	Technical	4.04	27
Integration with existing channels from a data maintenance perspective	Operational	4.00	25
Operational ease of use from the hotel's perspective	Operational	4.00	46
Traffic levels (number of visitors, lookers, hits)	Technical	4.00	38
Potential to open up new market segments	Marketing	3.96	46
Effect on existing customer relationships	Marketing	3.92	25
Effect of using channel on brand image	Marketing	3.75	24
Transaction cost	Financial	3.74	21
Potential to address current market segments	Marketing	3.70	29
Joining or introduction fee	Financial	3.57	9
Presence of competitors in the channel	Marketing	3.57	8
Capability to provide management information	Operational	3.54	12
Effect on existing channel's of distribution	Management	3.46	1
Effect on room rate	Financial	3.42	11
Ability to individually recognise customers	Management	3.29	14
Availability of alternative electronic channels	Management	3.25	2
Achieved volume of transactions	Financial	2.96	-
Forecast revenue from channel	Financial	2.96	7
Independence of the provider of the channel	System Provider	2.96	1
Achieved revenue from channel	Financial	2.57	-
Forecast volume of transactions	Financial	2.57	11

The development of the panel's reasoning can be clearly seen if the results for round two and round three are combined, as can be seen from Figure 4.8. (Note: As round two used a five point rating scale, and round three a voting system, the figures have been expressed as percentages of the maximum in this figure to allow for comparisons). Several of the factors that received higher importance ratings in round two received a relatively low number of votes in round three as a result of the voting methodology that forced panel members to prioritise and make choices as to the more important factors. These included factors such as the "availability of alternative channels", the "independence of the system provider", the "presence of competitors" and "the effect on existing channels of distribution", all of which received significantly lower scores in the third round. Such factors, while important, were revealed as being less of a priority by the findings of the study.

Figure 4.8 – Adoption Factors - Round Two and Round Three



It can also be seen in Figure 4.8 that the technical and operational factors are consistently high, as are the initial capital cost, the potential of the channel to address new market segments and each of the other factors identified above. In short, the third round has validated earlier findings and identified the most important factors to take into account when evaluating the adoption of hotel electronic channels of distribution. These are summarised in Table 4.9. While these include certain financial and marketing concepts, it can be seen that, in contrast to established evaluation methods, a wide range of factors, focusing mainly on the way in which the channel will perform in operations, should be considered.

Table 4.9 – Adoption Factors Top Ten

Factor	Technical	System Provider	Management	Operational	Marketing	Financial
Operational ease of use from the hotel's perspective				x		
Potential of the channel to open up new market segments					x	
Speed at which transaction can be completed	x					
Initial capital cost						x
Traffic levels	x					
Reputation of the system provider		x				
Potential of the channel to address current market segments					x	
Integration with existing channels from a data maintenance perspective	x					
Security	x					
Speed at which information / rates can be updated	x					

4.4.4 Developing A List of Potential Continuation Factors

The previous section discussed in detail the findings of the Delphi study focusing on the factors that need to be taken into consideration when evaluating the adoption of a hotel electronic distribution channel. When the research strategy was conceived, it was realised that the range of factors that needed to be taken into account when evaluating the continued use of an electronic distribution channel might be very different. For that reason, the identification of the appropriate range of factors for this situation was addressed separately. The findings of the study in relation to this issue are presented below.

In the initial round of the Delphi study, panellists were asked to nominate a list of the factors that they felt should be taken into account when evaluating the continued use of a hotel electronic channel of distribution. In the majority of cases (16), respondents indicated that the criteria were essentially the same as when a channel was being adopted. At the same time, many respondents (12) chose to nominate additional factors, amounting to another 71 suggestions. Such findings perhaps indicate that the evaluation process in this scenario is more complex, as more factors need to be taken into account.

As with adoption factors, content analysis was performed on the responses, which revealed that the decision as to whether to continue using an electronic channel is greatly influenced by performance. Factors cited included not only cost but also the number of both bookings achieved (11) and enquires (2), as well as its affect on average room rates (4). Only two other factors – the channel's future potential (6) and the availability of alternatives (2) - were mentioned by more than a single respondent. The former may indicate that it could be considered appropriate to continue using a particular channel

even if it is not currently performing as it may grow in importance in the future. As a result, the hotel may need to be positioned in that channel to take advantage of this future potential. And lastly, the factor relating to alternatives may be indication of the growing awareness among hotelier that they need to distribute electronically, but they just are not sure of exactly where. Thus the collective opinion of the panel seems to be that the evaluation criteria that need to be taken into account in this scenario are essentially the same as those to be considered when adopting a channel, with the additional idea that the actual performance of the system also needs to be considered.

4.4.5 Relative Importance of Continuation Factors

As with adoption factors, respondents were also asked to rank the factors identified in terms of their importance when evaluating the ongoing use of an electronic channel of distribution. The same rating scale as with adoption factors was used, and the results are shown below in Table 4.10.

As with adoption factors, it is the technical and operational issues that are rated the highest, although in this case the pattern is less clear as a variety of other management, marketing and financial issues also score highly. However, financial issues as a category once again score poorly. Two factors in this category (initial capital cost and joining fees) understandably receive the lowest mean scores when considering ongoing use of a channel as they are in effect sunk costs that cannot be recovered and thus are less relevant to the decision as to whether to continue using a channel.

However, some respondents did argue that they still needed to be taken into consideration, as, although the investment had already been made, whether to abandon

this investment or not was still a consideration. It is also apparent within this category that the revenue side of the financial equation becomes more important when the ongoing use of a channel is being considered. In contrast to with adoption factors, the financial factors focusing on revenue – achieved volume of transactions, achieved revenue from channel, and effect on room rate – all achieve relatively high mean scores.

In addition, the financial factors that indicate future potential – forecasted revenues from the channel and forecasted volume of transactions - rate far lower than their corresponding achieved counterparts. This supports the pattern suggesting in the findings of the first round – that it is performance in practice that should determine whether to continue to use a channel. Furthermore, another related factor – transaction cost – received the fifth highest importance score. Taken together these scores seem to support the argument made earlier – that, based on financial factors in isolation at least, channel use should be evaluated based on day-to-day performance rather than abstract financial models or strategic issues.

Table 4.10 - Evaluation Factor Ranking – Ongoing Use of a Channel

(1 Ignore to 5=Essential)

Factor	N	Mean	Standard Deviation	Skew	Standard. Error	Technical	System Provider	Management	Operational	Marketing	Financial
Speed at which information and rates can be updated	23	4.52	.59	-.806	.481	x					
Speed at which transaction can be completed	23	4.43	.66	-.767	.481	x					
Ability to individually recognise customers	24	4.38	1.06	-2.061	.472			x			
Potential of channel to open up new market segments	23	4.30	.82	-.647	.481					x	
Transaction cost	23	4.26	.92	-.573	.481						x
Operational ease of use from the hotel's perspective	23	4.26	1.01	-1.739	.481				x		
Traffic levels (number of visitors, lookers, hits)	23	4.17	1.15	-1.535	.481	x					
Security of the channel	23	4.13	.97	-.610	.481	x					
Potential of channel to address current market segments	23	4.13	.87	-.269	.481					x	
Capability to provide management information	24	4.12	1.08	-1.182	.472				x		
Achieved volume of transactions	23	4.09	1.16	-1.697	.481						x
Integration with existing electronic channels from a data maintenance perspective	24	4.08	1.10	-1.246	.472				x		
Effect on existing customer relationships	24	4.08	1.14	-1.139	.472					x	
Achieved revenue from channel	24	4.04	1.37	-1.419	.472						x
Effect of using channel on brand image	24	3.87	1.12	-.349	.472					x	
Reputation of the provider of the channel	23	3.78	.95	-.218	.481		x				
Effect on room rate	24	3.63	1.10	-.456	.472						x
Forecast volume of transactions	23	3.61	1.12	-.191	.481						x
Presence of competitors in the channel under consideration	23	3.57	1.24	-.321	.481					x	
Effect on existing channel's of distribution	24	3.54	1.02	.011	.472			x			
Forecast revenue from channel	24	3.54	1.28	-.503	.472						x
Availability of alternative electronic channels	24	3.17	1.34	-.094	.472			x			
Independence of the provider of the channel	24	3.08	1.28	.102	.472		x				
Initial capital cost	24	2.92	1.47	.245	.472						x
Joining or introduction fee	23	2.87	1.55	.157	.481						x

As when the adoption of a channel was being considered, each of the technical factors scores highly (the lowest being 4.13), as do the operational factors (lowest being 4.09). Once again these confirm the focus of the panel on actual performance discussed above. Further evidence for this viewpoint can be seen from the scores of the management issues. Both the effect on existing channels of distribution and the availability of alternative channels both score relatively poorly (3.54 and 3.17 respectively), indicating that the panel feels that strategic / tactical issues are less important than the manner in which the system operates. Such a theory is further supported when the results of the initial and second rounds of the Delphi are combined. Only two factors emerge as being both frequently cited and rated as highly important. Firstly, "achieved volume of transactions" was both the most frequently cited factor in the initial round, and received a rating of 4.09 – towards the top of the importance scale. Similarly, "transaction cost" was the second most frequently cited factor in the initial round, and was also rated highly. Both are performance issues – related to actual use of the system. In contrast, the more strategic issues and the channel's future potential seem to receive much less attention – receiving fewer citations and lower importance rating scores. As with adoption factors, such a viewpoint is in opposition to that expressed in most published literature, and thus it was revalidated in the final round of the Delphi.

4.4.6 Revalidating the Continuation Factors

As with the adoption factors, during round two of the Delphi study, respondents were asked if any factors had been omitted from, or were redundant in, the proposed list of evaluation factors. Several commented that when the ongoing use of the system is being considered, initial capital costs and joining or introduction fee should be

excluded. Another small group felt that volume of transactions should not be considered, as this is an integral part of revenue. However the logic behind these points is arguable. As was pointed out above, capital costs and joining fees can still be a consideration when deciding whether to retain / abandon a particular channel. In addition, volume of transactions is not the same as revenue, as a channel could generate a large number of transactions, but at deeply discounted rates, thus making it less attractive despite its high revenue. As a result, no factors were either added or removed from the continued use list presented for revalidation in the final round. Panel members were once again given an explicit number of votes and asked to prioritise the factors that should be taken into account when evaluating the continued use of a hotel electronic distribution channel.

As with adoption factors, the validation process confirmed earlier findings. Although the factor that received the largest number of votes was marketing oriented – "potential to open up new market segments"(40) -, operational issues such as "transaction speed" and "ease of use" were very close behind with scores of 38 votes respectively. Several of the other operational issues, such as speed and security also received high scores with 28 votes each. At the same time, financial factors were confirmed as being more important than was the case when evaluating the adoption of an electronic channel. Both "transaction cost" and "achieved revenue from the channel" received 38 votes, while a management factor – "ability to recognise individual customers" received 31 votes. At the opposite end of the scale, "initial capital cost" and "joining or introductory fee" both received low numbers of votes, confirming that they are less important than other factors in this particular situation.

Table 4.11 – Important Continuation Factors

Factor	Category from Round One	Mean Importance Rating	Votes
Speed at which information / rates can be updated	Technical	4.52	28
Speed at which transaction can be completed	Technical	4.43	34
Ability to individually recognise customers	Management	4.38	31
Potential to open up new market segments	Marketing	4.30	40
Operational ease of use	Operational	4.26	34
Transaction cost	Financial	4.26	38
Traffic levels (number of visitors, lookers, hits)	Technical	4.17	19
Potential to address current market segments	Marketing	4.13	29
Security of the channel	Technical	4.13	28
Capability to provide management information	Operational	4.12	23
Achieved volume of transactions	Financial	4.09	26
Effect on existing customer relationships	Marketing	4.08	24
Integration with existing electronic channels from a data maintenance perspective	Operational	4.08	25
Achieved revenue from channel	Financial	4.04	38
Effect of using channel on brand image	Marketing	3.87	12
Reputation of the provider of the channel	System Provider	3.78	8
Effect on room rate	Financial	3.63	8
Forecast volume of transactions	Financial	3.61	8
Presence of competitors in the channel	Marketing	3.57	9
Effect on existing channel's of distribution	Management	3.54	3
Forecast revenue from channel	Financial	3.54	9
Availability of alternative electronic channels	Management	3.17	2
Independence of the provider of the channel	System Provider	3.08	3
Initial capital cost	Financial	2.92	2
Joining or introduction fee	Financial	2.87	1

As was the case with adoption factors, considering the results of round two and three of the Delphi together helps to reveal the reasoning of the panel. The absence of any changes in the list of factors between the two rounds suggests that the correct set of factors has been identified. As was discussed above, with the exception of "initial capital cost" and "joining or introduction fee", each of the factors identified in the first round of the Delphi received relatively high (above 60%) importance scores from the panel. Using the voting system forced the panel to prioritise and has helped to identify the key factors that should be considered in this situation.

However, unlike with the discussion of the adoption factors, the pattern of what is important is not as clear, incorporating financial, marketing, management, technical and operational issues. Certain factors rank consistently high across both rounds. These include the transaction cost, as well as achieved revenue and achieved volume from the channel, suggesting a focus on how well the channel is performing financially. At the same time, a variety of technical factors (transaction speed, update speed, security and integration) rate consistently high, as does operational ease of use from the hotel's perspective, and two marketing factors – potential to open up new market segments and the ability to recognise individual customers. In contrast, factors such as the "availability of alternative electronic channels", "effect on existing channels of distribution", "effect on room rate" and the "independence of the provider of the channel" had all received relatively high importance scores in round two, but received few votes in the final round. While undoubtedly such issues are perceived as being important, they are not as high a priority as the factors discussed above. Thus combining the two sets of data has helped to clarify the range of evaluation factors that are most important when evaluating the continued use of a hotel electronic distribution channel. These are summarised in Table 4.12.

Figure 4.9 – Validation of Continuation Factors

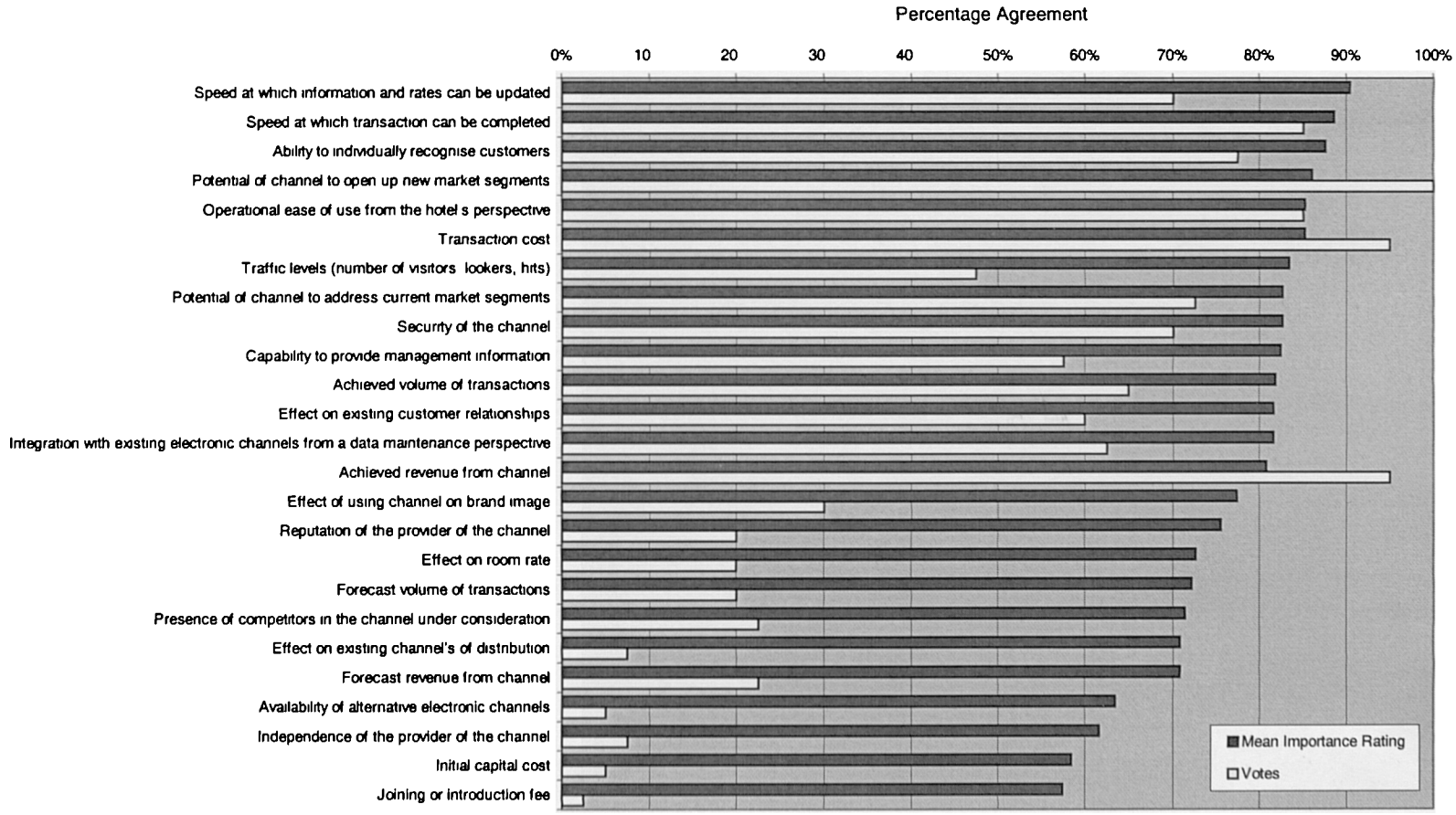


Table 4.12 – Continuation Factors Top Ten

Factor	Technical	System Provider	Management	Operational	Marketing	Financial
Potential of the channel to open up new market segments					x	
Transaction cost						x
Operational ease of use from the hotels perspective				x		
Achieved revenue from channel						x
Speed at which transaction can be completed	x					
Ability to recognise individual customers			x			
Speed at which information and rates can be updates	x					
Security of the channel	x					
Achieved volume of transactions						x
Integration with existing channels from a data maintenance perspective	x					

4.5 Difference Between Continued Use Factors And Adoption Factors

Although the majority of the respondents to the first round indicated that the way in which hotel electronic distribution channels should be evaluated is essentially the same irrespective of whether the channels are being evaluated for possible adoption or continued use, it is clear that the panel perceives different sets of factors to be more important in each situation. Using the mean importance scores from round two of the Delphi study allows these differences to be analysed in three different ways – by observing the relative change in position of each factor in the importance league table, by using a paired sample t-test to identify where the score differences are significant and using a matrix to identify relative importance in the two different scenarios.

When the relative placement of the evaluation factors mean scores is compared (see Table 4.13), an interesting pattern can be seen. Firstly several factors only move position in a relatively minor way, reflecting their consistent level of importance in the two scenarios. For example, the two factors that refer to speed (of information update and of transaction) remain at the top of the mean scores league – simply swapping places. Clearly these factors are regarded as being very important by the panel when evaluating hotel electronic channels of distribution, irrespective of whether its for adoption or continued use. Similarly, the independence of the provider of the system, the effect on room rate, forecasted revenue from the channel and the availability of alternative electronic channels all rate as consistently poor, and thus can be regarded as consistently less important.

Observing relative changes in position is also illuminating. As might be expected, the largest decline is for "initial capital cost", supporting the prior discussion about capital cost being less relevant once it has been committed. Similarly, "Joining or introduction fee" had the third largest decline in mean score. The second largest decline was for "reputation of the provider of the channel" which dropped by thirteen places, reflecting a view that actual performance is more important than more abstract concepts of how the channel might work. The range of factors that increased their average mean score supports this viewpoint. The largest gain was for "the ability to individually recognise customers", which moved from position 19 to position 3. The next three largest increases - achieved revenue from channel, achieved volume of transactions and transaction cost (+10, +10 and +7 respectively) are again focused on performance, adding weight to the argument that the actual day-to day performance of the system is the prime consideration when evaluating its continued use.

Table 4.13 – Relative Change in Ranking Based on Mean Importance Score

Factor	Position (Adoption)	Position (Continuation)	Relative Change (+ = higher - = lower)
Speed at which transaction can be completed	1	2	-1
Speed at which information and rates can be updated	2	1	+1
Reputation of the provider of the channel	3	16	-13
Initial capital cost	4	24	-20
Security of the channel	5	8	-3
Traffic levels (number of visitors, lookers, hits)	6	7	-1
Integration with existing electronic channels from a data maintenance perspective	7	12	-5
Operational ease of use from the hotel's perspective	8	6	+2
Potential of channel to open up new market segments	9	4	+5
Effect on existing customer relationships	10	13	-3
Effect of using channel on brand image	11	15	-4
Transaction cost	12	5	+7
Potential of channel to address current market segments	13	9	+4
Joining or introduction fee	14	25	-11
Presence of competitors in the channel under consideration	15	19	-4
Capability to provide management information	16	10	+6
Effect on existing channel's of distribution	17	20	-3
Effect on room rate	18	17	+1
Ability to individually recognise customers	19	3	+16
Availability of alternative electronic channels	20	22	-2
Achieved volume of transactions	21	11	+10
Independence of the provider of the channel	22	23	-1
Forecast revenue from channel	23	21	+2
Achieved revenue from channel	24	14	+10
Forecast volume of transactions	25	18	+7

However simply observing differences in the mean scores is not rigorous. Such differences could be due to chance, error or a variety of other factors. However, a paired sample t-test (shown in Table 4.14) revealed differences in the mean scores of nine factors at the 5% significance level. As was discussed earlier, four of these (namely "initial capital cost", "joining or introduction fee", "achieved revenue from channel" and "achieved volume of transactions") were to be expected since they relate practically exclusively to just one of the two situations – the initial evaluation in the case of the first two factors and the continued use for the latter two. Thus, while the panel as a whole perceives start up costs to be important in the adoption evaluation, such costs become far less important as a decision criteria when channels are being evaluated for ongoing use. In a similar manner, the difference in the scores for "transaction cost" was to be expected. While this issue is important when considering the adoption of a channel, it becomes relatively more important when the system is in actual use as its effect are actually being experienced. The scores for four other factors were also statistically different. The mean scores for "Speed at which information and rates can be updated" and "Capability to provide management information" both grew significantly, adding to the evidence that actual performance becomes more important when continued use is being evaluated. Furthermore, as might be expected from earlier discussions, the mean scores for an "ability to individually recognise customers" were significantly different, and it was rated far higher where the continued use of a channel was being evaluated. Freeform comments about this factor indicated that, in actual use, the ability to be able to establish the profile of customers, recognise repeat customers and interact with them on a one-to-one basis became more important as the system was being used.

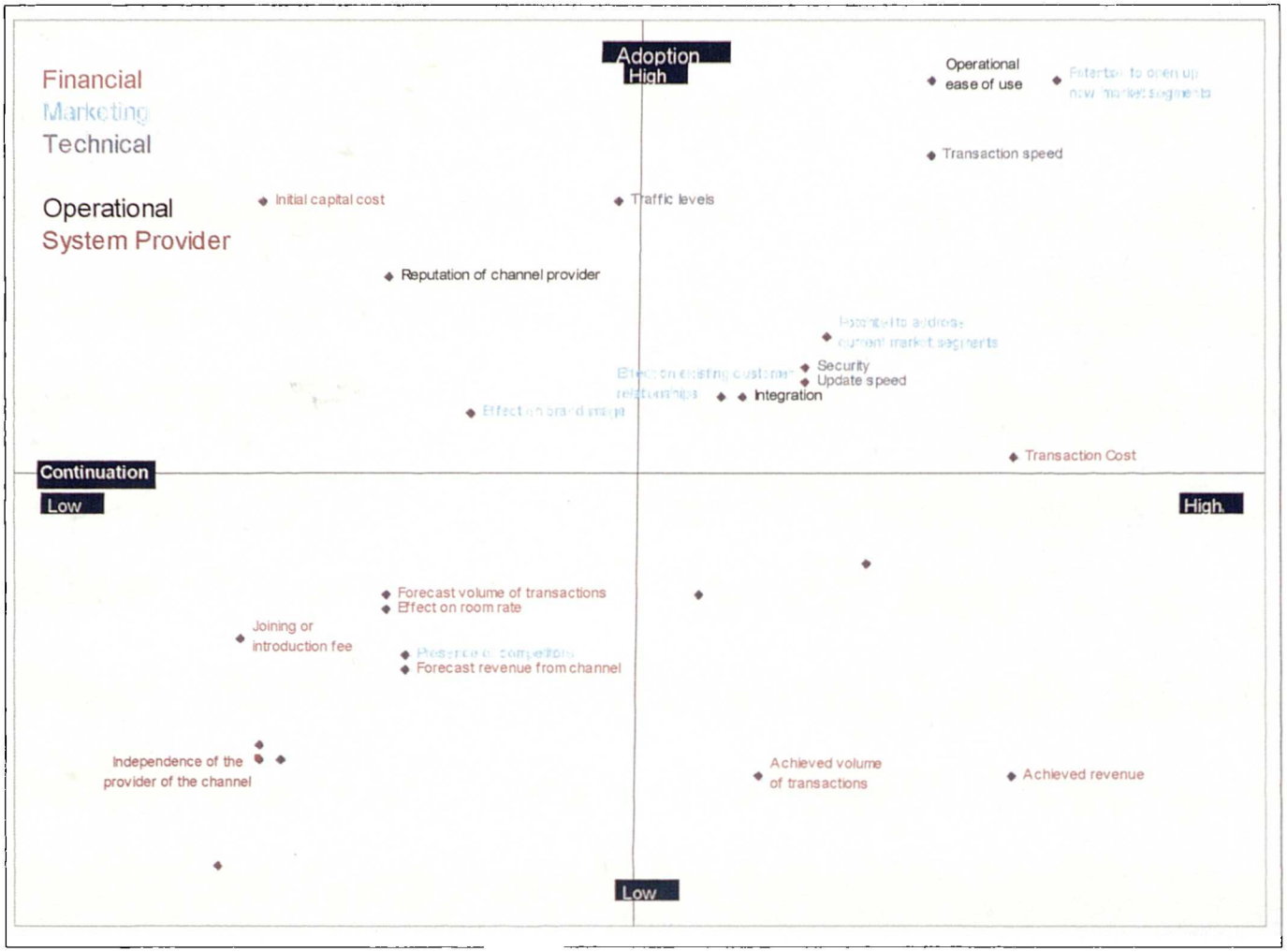
Table 4.14 - Paired Sample t-test Comparing Mean Importance Scores for Adoption Factors and Continued Use Factors

Factor * = p value < 0.05	t	df	Sig (2-tailed)
***Ability to individually recognise customers**	**-4.511**	**23**	**.000**
***Achieved revenue from channel**	**-3.844**	**23**	**.001**
***Achieved volume of transactions**	**-3.861**	**22**	**.001**
Availability of alternative electronic channels	.401	23	.692
***Capability to provide management information**	**-3.245**	**23**	**.004**
Effect of using channel on brand image	-.647	23	.524
Effect on existing channel's of distribution	-.358	23	.723
Effect on existing customer relationships	-.678	23	.504
Effect on room rate	-1.045	23	.307
Forecast revenue from channel	-1.857	23	.076
***Forecast volume of transactions**	**-2.405**	**22**	**.025**
Independence of the provider of the channel	-.157	23	.877
***Initial capital cost**	**3.685**	**23**	**.001**
Integration with existing electronic channels	-.440	23	.664
***Joining or introduction fee**	**2.113**	**22**	**.046**
Operational ease of use from the hotel's perspective	1.298	22	.208
Potential of channel to address current market segments	-2.011	22	.057
Potential of channel to open up new market segments	-1.558	22	.133
Presence of competitors in the channel under consideration	.000	22	1.000
Reputation of the provider of the channel	1.775	22	.090
Security of the channel	-.492	22	.628
***Speed at which information and rates can be updated**	**-2.336**	**22**	**.029**
Speed at which transaction can be completed	-1.226	22	.233
Traffic levels (number of visitors, lookers, hits)	1.164	22	.257
***Transaction cost**	**-2.228**	**22**	**.036**

However it is the matrix analysis that most clearly demonstrates which factors should be taken into account in each scenario. By plotting the mean importance scores for adoption on the vertical axis, and those for continuation on the horizontal, it possible to visualise the factors that are important in both cases. For example, those in the top right hand quadrant are important in both situations, with their distance from the centre of the graph indicating their degree of relative importance. Those in the bottom left hand quadrant were identified as being least important in both situations, with again their distance from the origin indicating their relative unimportance. Those above the horizontal axis are more important than average when the adoption of a channel is being considered, while those to the right of the vertical axis are more important when it is the continued use of a channel that's being evaluated. On the matrix, the evaluation factors have been colour coded into the categories developed in round one of the Delphi study to facilitate discussion.

From the matrix, it is immediately noticeable that the majority of the factors in the top right quadrant (important in both situations) are operational or technical, together with a small number of marketing factors. The only financial issue that is there is transaction cost, and that is very low on the adoption axes. In contrast, those included in the bottom left hand quadrant (unimportant in both cases) include the majority of the financial factors. Furthermore, two of the more strategic issues – "Availability of alternative electronic channels" and "Effect on existing channels of distribution" are here also and are among the lowest on both scales.

Figure 4.10 – Matrix Analysis of Evaluation Factors



The analysis shows that the panel perceives the methodology to be different when evaluation hotel electronic channels of distribution for adoption and for continued use. While there is some overlap – i.e. those thought to be important in both situations – a different set of additional factors becomes important in the two scenarios. In terms of adopting a channel, the matrix shows that factors such as "initial capital cost", "traffic levels" and "reputation of the system provider" are the ones that need to be considered. In contrast, once the channel has been adopted, it is a different set of additional factors, focusing mainly on the revenue side of the profitability equation and future potential that must be taken into account. Clearly the evaluation process in the two situations is very different.

4.6 Conclusions

This chapter has presented the results of a Delphi study focused on identifying and prioritising a portfolio of evaluation factors that can be used for evaluating hotel electronic channels of distribution. As a foundation, the first stages of the Delphi study focused on clarifying what is regarded as electronic distribution of the hotel product. This was found to be a non-linear multi-staged process, incorporating both essential and optional components. The essential ones include, at a minimum, an information provision component to allow potential customers to chose a particular property, a reservation processing component to allow customers to book the product of their choice and a payment component, giving the ability to accept and process payments to act as a guarantee and thus allow a legally binding contract to be formed. Without each of these three elements, it is clear that the process being described is not regarded by the expert group as being electronic distribution. For example, solely providing information might better be termed electronic promotion or electronic

publishing. Both a booking mechanism and a guarantee facility need to be included for the process to become electronic distribution.

In addition to the essential components, a variety of "optional", "supplementary" or "complementary" processes can be used to support the hotel electronic distribution process. Such optional components (such as for example, reporting or yield management) can sometimes be used as an integral part of the electronic distribution process, while others (such as data warehousing or Customer Relationship Management) can be used after the sales process is complete to increase the efficiency of the business as a whole. However, optional processes differ from essential ones in that electronic distribution can occur in their absence. While they can increase the effectiveness and efficiency of the overall process, they are not key to its actual occurrence and thus can be omitted if so desired. It is also clear from the expert panel's comments that there is increasing pressure to add additional elements to hotel electronic distribution. Thus what is *desirable* in the future may change as a result of competitive or environmental pressures, but it is clear that the three essential components of *information – reservation – payment* will remain at the core of the electronic distribution process.

The study revealed a great deal of confusion as to the terminology that is used to describe and categorise hotel electronic channels of distribution. It's clear that no commonly accepted vocabulary exists in the hotel electronic distribution arena, even among experts in the field. This presents problems in that it can lead to miscommunications and imprecision. To counteract this, a channel description nomenclature was developed, which uses predefined abbreviations linked in a chain to

give a unique name to each channel. This strategy has the advantage of being easily expandable to incorporate channels or nodes outside the scope of the current study, such as for example Business-to-Business channels or those from the broader tourism sector. A proposed initial set of abbreviations for use in Business-to-Customer hotel electronic distribution has been presented and the utility of the notation system has been demonstrated throughout the discussion of the other results of the study.

A generic but comprehensive typology of the Business-to-Customer hotel electronic distribution channels available to hotels at the time of the study has been compiled and validated. This has been kept general in nature by avoiding the use of system names, in an attempt to prevent the model from becoming out of date too rapidly. However it has to be recognised that the arena is in a state of evolution, and thus its accuracy is unlikely to remain valid for long. The typology does however clearly show the complexity of the choice facing the hotelier hoping to evaluate hotel electronic distribution channels by illustrating the range and diversity of channels available and the degree of interrelation between them. Individual routes can be complex and convoluted. Understanding the implications of using any particular route is difficult, thus demonstrating the need for and potential utility of a channel evaluation methodology.

Each channel identified has been ranked in terms of its current importance and its future potential. This data has been combined to show which channels are likely to be of importance in the future. From this analysis, it is clear that the travel distribution matrix as we currently understand it will undergo some significant changes. Firstly, it is apparent from the analysis that more direct channels are forecast to come to the

fore. In practically all cases, those with fewer nodes are perceived as being most important in the future, while those with multiple nodes involving several intermediaries will decline. Secondly, the importance of the travel agent as the interface between the distribution chain and the customer will are become less important. Practically every channel involving the traditional travel agent as a node was identified by the expert panel as being in a state of decline. The only exception to this trend was where the travel agent itself was using the Web as the interface method with the customer. This trend also reflects the most significant forecasted change. Every channel using the Web to address the customer was identified as being one that would grow significantly. Irrespective of what nodes were present at the initial stages of the distribution chain, if the Web was being used as the delivery mechanism, the importance of the channel was forecast to grow. This is particularly apparent not only when travel agent based channels are being considered, but also with representative companies and with destination management system based channels. The importance of representative companies is forecast in general to decline, except where they use the Web as their delivery mechanism – suggests that their role will change and make them more like a Web intermediary rather than their traditional intermediary role. This trend is also repeated in the case of DMS based channels, with those that use the Web as their delivery mechanism forecast to grow, although in this case the effect is not as immediately apparent as DMS based channels themselves are also forecast to grow in importance.

The study has shown that navigating the maze of hotel electronic distribution channels is clearly confusing, and that knowing which to use for a particular property is clearly a difficult task. Having demonstrated the utility of a potential channel evaluation

methodology, the study set out to identify and prioritise a list of the factors to be considered when evaluating such channels. An initial list of evaluation factors was developed and presented to the expert panel. The factors presented were validated as being correct, with the majority receiving an importance rating above the midpoint, indicating that they needed to be taken into consideration when evaluating an electronic channel of distribution. While each of the factors identified was considered important, it was also revealed that different factors were more relevant depending on whether the initial adoption of a channel was being considered, or whether its continued use was being evaluated.

When evaluating the adoption of a channel for the first time, operational and technical issues need to be among the primary factors taken into consideration. These include factors such as ease of use, transaction speed, update speed, traffic levels, integration and security. The initial capital cost also needs to be taken into consideration, as does the channel's ability to service both existing and additional market segments. However it is clear that it is how the system will operate in practice – rather than how it will perform financially or contribute strategically – that is thought to be the prime consideration in the channel adoption decision. In contrast, the continuation decision appears to be more complex. Not only were more evaluation criteria suggested in this scenario, but also the pattern of importance scores is less clear. The decision seems to be multifaceted, incorporating financial, marketing, strategic, operational and technical elements. It is clear that financial aspects, particularly the revenue side of the equation, becomes more important than in the adoption evaluation decision, as factors such as transaction cost and achieved revenue / volume were all cited as being particularly relevant in this situation. Technical and operational issues such as ease of

use, speed and integration remain important as well, thus supporting the argument that the route's performance in practice, both financially and operationally, should be the key determinant as to whether to continue to use it. At the same time, the channel's future potential was also thought to be relevant in the continuation evaluation decision, reflecting a feeling that while a channel might not be performing adequately at present, its use should be continued if it has the potential to contribute substantially in the future.

Thus a portfolio of evaluation techniques that could be used to evaluate hotel electronic channels of distribution both at adoption and for ongoing use has been developed. However, as a result of the nature of the exploratory research approached used, the findings must only be regarded as indicative. Generalizations as to the behavior and attitudes of the industry as a whole cannot be inferred from these results, and further research is necessary to establish the acceptability and applicability of the techniques identified in practice. This is addressed in Chapter Five.

Chapter Five

Chapter Five - Industry Survey Results

5.1 Introduction

Chapter Two demonstrated how both the number and complexity of the electronic channels of distribution available to hotels has grown, and highlighted how few hoteliers appear to have objective criteria for deciding which of these channels to adopt, or for the evaluation of the use of existing channels. The chapter concluded that these questions, while important for the future success of hotels, are currently under-researched, and that developing a conceptual model to help address the issue would be of benefit. The lack of prior research necessitated the use of a grounded theory approach to exploring this question. Thus, a Delphi study, using a panel of hotel electronic distribution "experts", was used as the initial research methodology. This helped clarify the meaning of electronic distribution as it relates to the hotel sector, established a typology of the channels current available, assessed the future potential of each of these channels from the perspective of the expert panel, as well as identified a range of possible factors that could be used to assess electronic distribution channels, both at the time of adoption and where their continued use is being considered. The results of this study were presented in Chapter Four, and showed that in contrast to the established literature (where financial methods are predominant), the panel saw the evaluation of hotel electronic distribution channels as being multifaceted, with operational and technical issues being at least as important as financial ones, particularly when the adoption of a channel is being considered.

This chapter presents the findings of an industry survey designed to explore the acceptability and applicability of these findings among industry practitioners. As

such, its aim is to triangulate and validate the results of the Delphi study. Electronic distribution managers in the major hotel brands (as represented by the membership of the Hotel Electronic Distribution Network Association - HEDNA) were polled electronically to establish their views of both the current hotel electronic distribution arena and as to how they currently evaluate electronic distribution channels. A total of 42 responses were received in the allotted timeframe, giving a response rate of 25 per cent, which was considered adequate for the purposes of this study. These responses represented the views of the electronic distribution managers of 36 hotel brands, representing over 21,000 hotel properties and nearly 600,000 hotel rooms. The mean number of properties within respondent companies was 625 while the mean number of rooms in companies represented by respondents was just over 20,000. Respondents were relatively evenly distributed in terms of market segment serviced, although there was a slightly larger response from mid-price hotel companies. However this was relatively minor in terms of overall response and should not bias the results in a major way.

Discussion of the findings is arranged into four main sections. Respondents' opinions as to the relative importance of the channels presented to the volume of business of chain hotels in general are first of all discussed. These are then compared with findings in respect of respondents' own companies to establish differences between respondents' perceptions of industry trends in general with that of their own performance. Practitioners' viewpoint as to the future potential of each channel is then examined, before moving on to consider their current practices with regard to channel evaluation. Lastly, acceptance of the decision factors identified in the Delphi study by industry practitioners is assessed.

5.2 Electronic Distribution Channels in the Hotel Sector

Chapters Two and Four explored the rapid growth and development of hotel electronic distribution channels currently in progress. Hoteliers now have a vast range of potential electronic routes to the customer available to them, and choosing which (or which combination of) channels to use has become a relatively complex decision. For that reason, as a precursor to the development of a set of evaluation techniques for channel assessment, it was thought important to establish which of the channels currently available were felt to be the most important in terms of generating business for hotels.

A list of options was developed for consideration from those identified as being most important by Delphi participants. In the electronic questionnaire, these options were presented in alphabetical order, and respondents were asked to indicate which, in their opinion, contributes most to the volume of business of chain hotels in general. As in the Delphi study, a voting system was used, with each respondent having a maximum of twenty votes. This was designed to force respondents to prioritise, and thus prevent all channels from being ranked as equally important. Multiple votes could be assigned to any route, and thus if respondents considered a particular route to be important, they could assign it two, three or even more votes. The results of this voting process are shown in Table 5.1.

Table 5.1 - Relative Importance of Hotel Electronic Distribution Channels

Channel	Votes
Hotel to CRS to Switch to GDS to Travel Agent to Customer	123
Hotel to CRS to GDS to Travel Agent to Customer	75
Hotel to CRS to Customer	68
Hotel to CRS to Hotel Company web-site to Customer	59
Hotel to CRS to Switch to GDS to Web intermediary to Customer	52
Hotel to CRS to Switch to GDS to GDS web-site to Customer	46
Hotel to GDS to Travel Agent to Customer	44
Hotel to CRS to Switch web-site to Customer	40
Hotel to CRS to GDS to GDS web-site to Customer	40
Hotel to Rep Company to GDS to Travel Agent to Customer	37
Hotel to Web intermediary to Customer	37
Hotel to CRS to DMS to Destination web-site to Customer	31
Hotel to Rep Company to Customer	31
Hotel to DMS to Customer	28
Hotel to individual hotel web-site to Customer	24

Analysis of the results demonstrates the importance of the "traditional" hotel electronic channels of distribution. Not surprisingly, the highest number of votes was received by H-CRS-S-GDS-TA-C (123) and H-CRS-GDS-TA-C (75), reflecting the continued importance of the travel agent in hotel sales and marketing. This trend is also supported by the high number of votes received by the other routes that involved the travel agent (H-GDS-TA-C and H-Rep-GDS-TA-C, with 44 and 37 votes respectively). The next highest route, H-CRS-C (68) is again a traditional route, representing sales to customers through telesales at the company's central reservations office. As such, five of the top seven routes are established channels that use traditional routes to the marketplace. Five of the next six highest routes involve the Web as the communications medium between the last node in the distribution chain and the customer. H-CRS-HW-C and H-CRS-S-GDS-GW-C received approximately

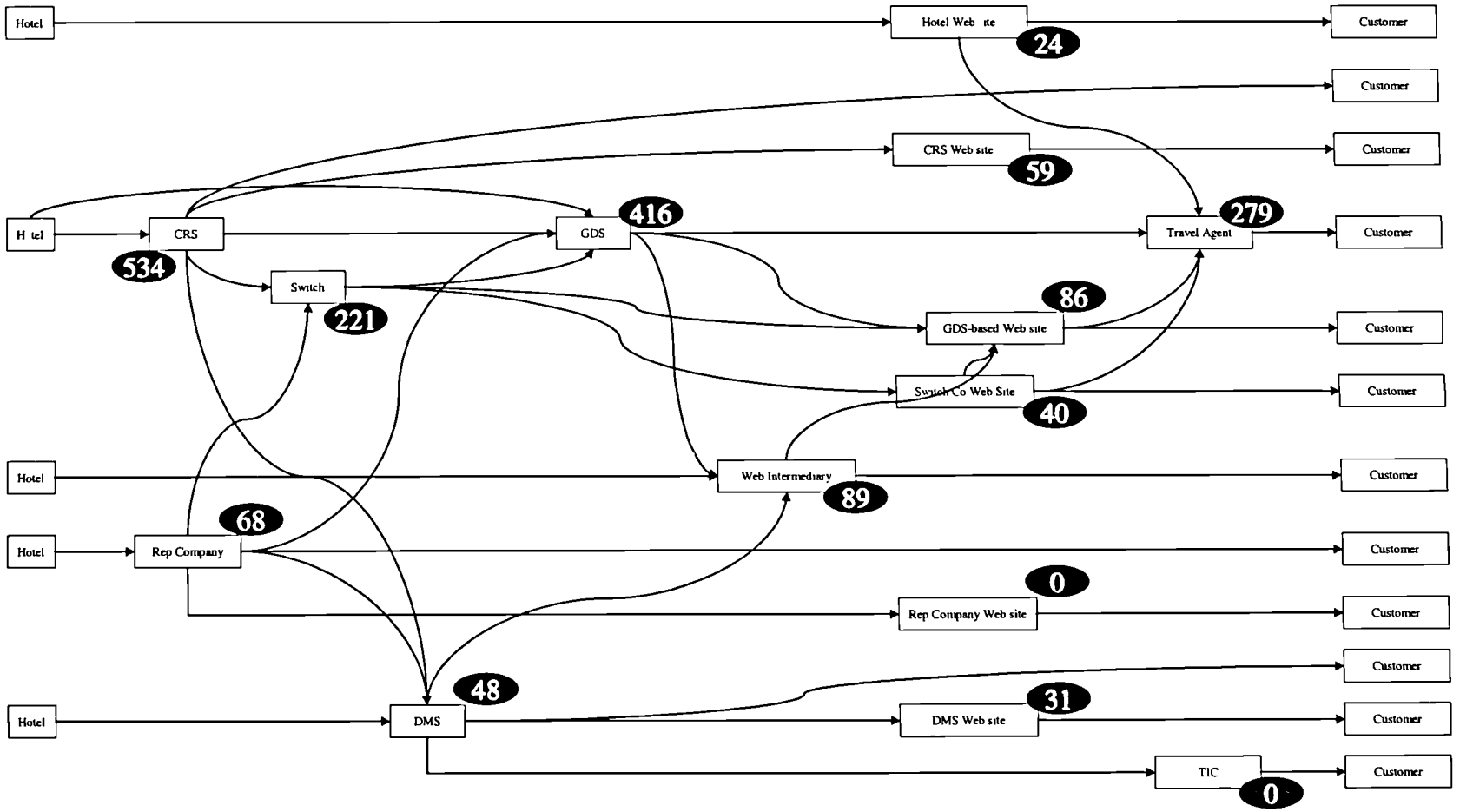
fifty votes each, while H-CRS-SW-C, H-CRS-GDS-GW-C and H-WI-C all received approximately forty votes each. Thus despite claims in both the academic and the trade literature that the Web is still minor in terms of its online sales for hotels, it is clear that the electronic distribution managers of the chain hotels now consider it to be important and (particularly when all of the Web based routes are combined) a major contributor to business volumes. On a related note, it is interesting to note that direct to consumer distribution over an individual hotel property's website received a relatively small number of votes from this respondent group. Such a finding may be influenced by the background and job-positions of respondents – electronic distribution managers at corporate level in chain hotels – who would have a vested interest in discouraging efforts by individual properties from developing their own initiatives outside of corporate control. While not directly addressed in the research, this may be the reason that the channel is perceived to be of relatively minor importance, despite the emphasis on direct sales in the general e-commerce literature.

An alternative method of analysis is not just to examine the number of votes received by the routes themselves, but instead to examine which nodes in the distribution chain are included in the channels chosen by respondents. When a node is given one vote each time it is mentioned in a channel, those nodes most important as facilitators for hotel electronic distribution for the chain hotels can be identified. This analysis (shown in Figure 5.1) reveals the continued overwhelming importance of the CRS in the hotel electronic distribution strategy of the hotel chains. The vast majority of channels have their origins in the CRS, irrespective of how they are ultimately delivered to the customer. Industry practitioners' perceptions of the importance of the GDS and the travel agent in hotel distribution can again be clearly observed. These nodes received a high number of preferences, indicating that the viewpoint from those

actually working in this arena is that this traditional route remains the primary one for chain hotels at present. That being said, the analysis reveals the importance of the Web as a delivery mechanism. The votes indicate that the majority of channels use the Web as the communications mechanism between the last node in the distribution chain and the customer. Although these votes were spread out over a variety of different channels (e.g. direct website, chain website, Web intermediary and destination website), it is clear that the Web is no longer an experimental communications medium, but one that is contributing significantly to the volume of business of the hotel chains.

Respondents were also asked if any significant channels had been omitted from the suggested list. Specifically they were asked to suggest any B2C (Business-to-Consumer) channels that they felt would have a major impact on hotel distribution in the 12 months following the survey. Content analysis techniques were again used to explore their responses but no additional channels were identified. Many of the less frequently cited channels suggested by the Delphi panel were again noted by the industry group, with a predominant emphasis on the Web as the penultimate communications medium with the customer – either through representative company based Websites, wholesaler or consolidator sites, specialised Websites (e.g. meeting or wedding planners) or through auction / name-your-own-price sites. Several of the suggestions also focused on the topic of wireless communications, although most respondents pointed out that it was unlikely to have a major effect on sales volumes for the foreseeable future.

Figure 5.1 – Node Analysis of Hotel Electronic Distribution Channels – Industry Perspective



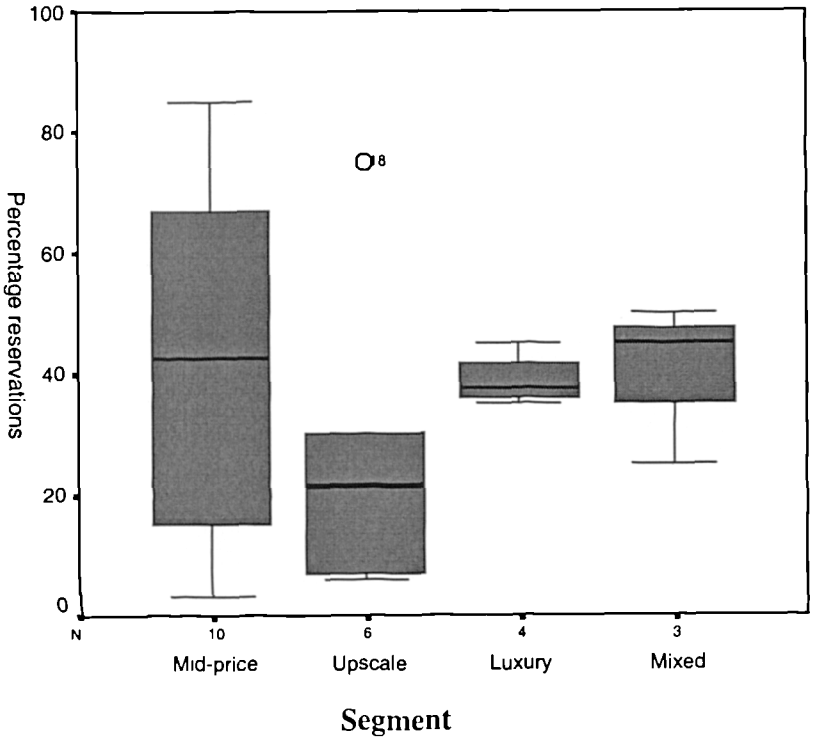
The suggestions also drew attention to how multiple third parties (for example wholesalers, web intermediaries, representative companies and even travel agent based websites) are all likely to have an effect on future volumes of business, and further increase the complexity of the hotel electronic distribution arena. This goes against the consolidation trend being seen in many other areas of commerce, as the number, variety and complexity of options available seems to be increasing rather than decreasing. Overall, however, the industry panel agreed that the list of channels presented was indeed the more important ones for chain hotel electronic distribution at the time of the research, and that there had been no major errors or omissions.

5.3 Electronic Distribution in Respondent Companies

In addition to being asked to identify which channels they felt were most important for chain hotels in general, respondents were also questioned about their own company's use of electronic distribution channels. The initial question in this section asked respondents to indicate the percentage of their company's overall reservations estimated to arrive through electronic channels. Responses ranged from three percent to eighty-five percent with a mean of approximately forty percent. Such findings are comparable to statistics available from industry sources in relation to electronic reservation volumes for chain hotels worldwide (see, for example, HEDNA (HEDNA 1998)). However, the percentage varied greatly depending on the market segment being serviced by the brand in question. As can be seen from Figure 5.2, upscale brands received a substantially lower mean percentage of electronic reservations than either mid-priced, luxury or those in the mixed category (too few budget brand respondents replied to this question to be included in the analysis). While brands in the mid-priced, luxury or mixed categories had a mean of approximately forty per

cent, those in the upscale category averaged at about twenty-two percent. Brands in the mid-price category also showed great variability, with a range of between three percent and eighty-three percent. Overall the data confirmed the importance of electronic distribution as a primary source of business for respondents' hotel chains, generating significant volumes of reservations irrespective of the level of brand involved.

Figure 5.2 – Percentage Electronic Reservations Broken Down by Market



In addition to indicating their overall percentage of electronic reservations, respondents were also asked to identify the channels that currently contribute most to the volume of business of their company. The list of channels used in the earlier question was again presented, and the same voting system, with each respondent

having a maximum of twenty votes and the ability to assign multiple votes to each channel, was used. An analysis of their responses is shown in Table 5.2.

As was the case when respondents were asked to indicate the relative importance of channels for chain hotels in general, the "traditional" hotel electronic channels of distribution once again received the highest number of votes. However, while H-CRS-S-GDS-TA-C again scored highest in the rankings (116), for there own companies, respondents rated H-CRS-C (86) higher than H-CRS-GDS-TA-C (63), a reversal of the situation when assessing channel use in the industry in general. The two other "traditional" hotel electronic distribution channels (H-R-GDS-TA-C and H-GDS-TA-C) received a smaller number of votes with 42 and 29 votes respectively. Distribution over the company's CRS-based website (H-CRS-HW-C) received the next highest number of votes (56), while the remainder of the Web delivered channels (H-C-SW-C, H-CRS-S-GDS-WI-C, H-CRS-S-CRS-GW-C, H-CRS-GDS-GW-C and H-WI-C) received substantially smaller numbers of votes with 36, 34, 33, 31 and 30 votes respectively. Both channels that involve DMS (H-DMS-C and H-CRS-DMS-DW-C) also received a relatively low number of votes (22 and 21 respectively), which is not surprising given that respondents represent chain hotels while DMSs actively target independent properties and smaller groups (Sussmann and Baker 1996). Therefore their contribution to the volume of business of chain hotels could reasonably be expected to be minimal. Once again, direct distribution through a property's own website received a low number of votes and thus does not currently contribute in a significant way to the business volumes of respondent companies. Lastly H-Rep-C also received few votes (22), indicating that a channel that once

produced significant volumes of business for many chains may no longer be working efficiently.

Table 5.2 – Contribution to Volume of Business of Respondent Hotel Companies

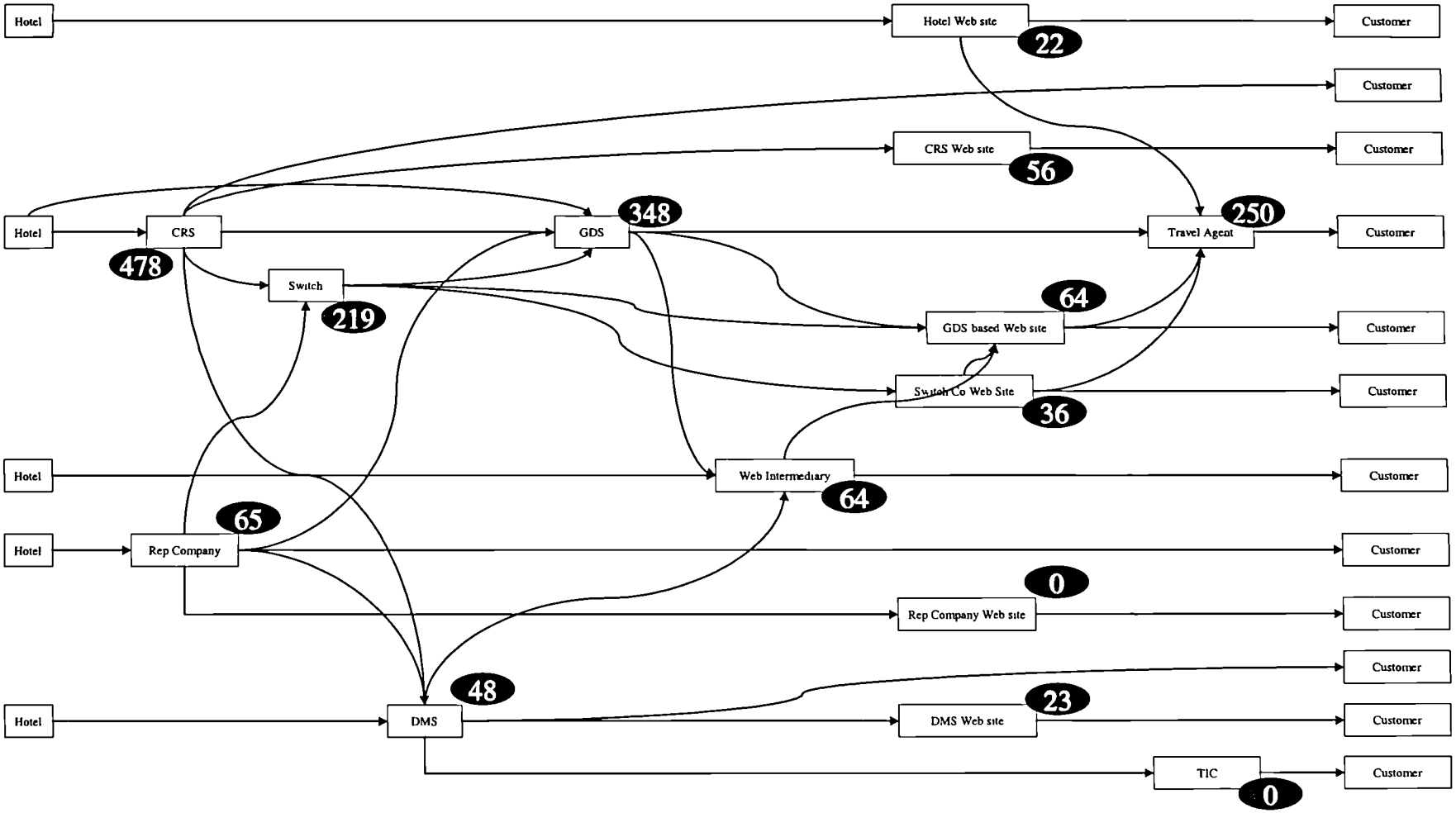
Channel	Votes
Hotel to CRS to Switch to GDS to Travel Agent to Customer	116
Hotel to CRS to Customer	86
Hotel to CRS to GDS to Travel Agent to Customer	63
Hotel to CRS to Hotel Company web-site to Customer	56
Hotel to Rep Company to GDS to Travel Agent to Customer	42
Hotel to CRS to Switch web-site to Customer	36
Hotel to CRS to Switch to GDS to Web intermediary to Customer	34
Hotel to CRS to Switch to GDS to GDS web-site to Customer	33
Hotel to CRS to GDS to GDS web-site to Customer	31
Hotel to Web intermediary to Customer	30
Hotel to GDS to Travel Agent to Customer	29
Hotel to DMS to Customer	25
Hotel to Rep Company to Customer	22
Hotel to individual hotel web-site to Customer	22
Hotel to CRS to DMS to Destination web-site to Customer	21

As was discussed above, analysing the nodes through which each of the channels flow is useful in identifying the systems that are perceived to be most important in hotel electronic distribution. If a node is given one vote each time it is mentioned in one of the above channels, those that facilitate the distribution process in respondents' companies can be clearly identified. As can be seen from Figure 5.3, the hotel CRS is once again perceived to be the most important system in the distribution process. The node received a total of 478 votes as a result of its role as the first node in the majority

of the routes to the customer identified above. The GDS are next, with 348 votes, again reflecting their role in feeding data and processing reservations to / from a large proportion of routes. The travel agent node is the third most commonly cited, with 250 votes, reiterating respondents' perception of their continued importance in hotel electronic distribution. Thus, once again, the importance of the traditional electronic channels of distribution at present is confirmed.

That being said, the node analysis also revealed respondents' perception as to the importance of Web delivered channels. Taken collectively, nodes that use the Web as their delivery mechanism to the customer received 265 votes (as opposed to 250 votes for travel agents), indicating that industry distribution managers now perceive the Web to be an important source of bookings for their own companies. When analysed individually, GDS based Websites and Web Intermediaries jointly received the highest number of votes with 64 respectively. These were followed by CRS based sites at 56 votes, and DMS based sites at 23. Individual hotel Websites received just 22 votes while two other options - Tourism Information Centres and Representative Company based websites - did not receive any votes, indicating that while such routes to the customer exist, they are not seen as being important contributors to business volumes by the respondent group. Overall the node analysis confirmed the findings discussed above. Perhaps this can be best summarised by saying that the GDS to travel agent route is still seen as critical to facilitating hotel electronic distribution, but that a large number of Web based channels have also developed that collectively are now substantial in terms of their importance.

Figure 5.3 – Node Analysis of Respondent Company's Electronic Distribution Channels



Respondents were also asked if they felt that any channels not included in the list presented would have a significant impact on the electronic distribution of their chain in the 12 months following the survey. Once again, a small number of responses were received, most of which focused on the growing role of third parties in hotel electronic distribution. As was discussed above, such additions further increase the number of options available to customers and hoteliers alike, thus further increasing complexity and heightening the need for an objective channel evaluation methodology.

5.4 Comparing Industry Perceptions with Company Performance

The discussions presented above have focused on two related but separate themes. Sections 5.2 focused on respondents' perceptions of the relative importance of the electronic distribution channels suggested for chain hotels in the industry in general, while section 5.3 discussed the performance (real or perceived) of the same channels within respondents' companies. Comparing these analyses presents an opportunity to establish if a gap exists between how respondents see the performance of the industry in general, and actual experiences in their own companies.

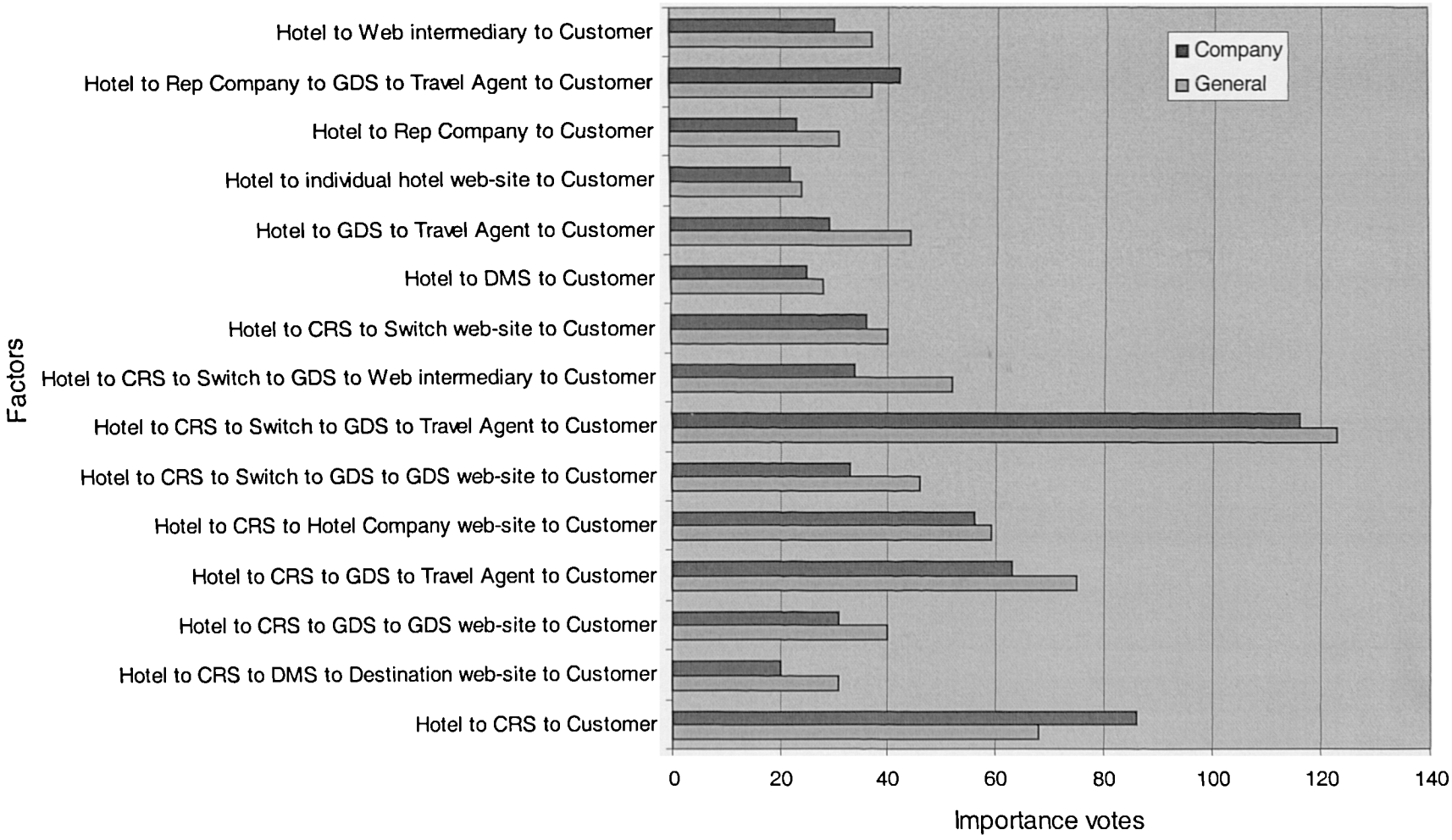
As can be seen from Figure 5.4, the pattern of scores in both cases is similar, with the same channels in general being perceived as being most important. H-CRS-S-GDS-TA-C was clearly perceived to be the single most important channel in both cases, and each of the other channels identified as being important in earlier discussions also emerged with similar scores. While scores varied on an individual basis, a paired sample t-test (shown in Table 5.3) revealed only a single case (H-CRS-GDS-TA-C) where the difference in mean scores was significant at the 95% confidence level. In

this case, respondents perceive the channel to be more important for chain hotels in general than for their own company. A reason for this may be that most companies that respondent to the survey used a Switch Company to connect to the GDS, as can be observed in Figure 5.3. Thus it is possible that respondents may perceive that more other companies connect their CRS to the GDS directly than is actually the case, thus resulting in a higher score for chain hotels in general and explaining the difference.

Table 5.3 – Paired Sample t-test on General Vs Own Mean Scores

Channel	t	df	Sig (2 tailed)
Hotel to CRS to Switch to GDS to Travel Agent to Customer	.683	17	.504
Hotel to CRS to Customer	-.243	24	.810
Hotel to CRS to GDS to Travel Agent to Customer	2.251	19	.036
Hotel to CRS to Hotel Company web-site to Customer	-1.190	23	.246
Hotel to Rep Company to GDS to Travel Agent to Customer	-.567	18	.578
Hotel to CRS to Switch web-site to Customer	-1.046	14	.313
Hotel to CRS to Switch to GDS to Web intermediary to Customer	-.739	16	.470
Hotel to CRS to Switch to GDS to GDS web-site to Customer	-.877	14	.395
Hotel to CRS to GDS to GDS web-site to Customer	-1.096	10	.299
Hotel to Web intermediary to Customer	-.806	10	.439
Hotel to GDS to Travel Agent to Customer	1.814	10	.100
Hotel to DMS to Customer	1.079	8	.312
Hotel to Rep Company to Customer	.619	14	.546
Hotel to individual hotel web-site to Customer	1.333	14	.204
Hotel to CRS to DMS to Destination web-site to Customer	1.218	10	.251

Figure 5.4 – Comparison of Mean Scores for Industry in General with those of Respondent's Own Company



Focusing on the pattern of mean scores in each of the two scenarios does suggest an interesting theory. Where respondents were asked to indicate the relative importance of channels for chain hotels in general, their resulting answers seem to be relatively dispersed. Nine of the channels suggested received total scores above 40, while the mean score was 49 and the standard deviation was 27. In contrast, when questioned in respect of their own company's use of electronic distribution channels, only four channels received scores above 40. Similarly the mean was 43 and the standard deviation was 25, perhaps indicating more agreement on which are the key channels being used. One interpretation of this may be that while industry practitioners see a large number of channels theoretically available, and perceive other companies to be using these channels, in practice only a small number of channels are actually producing significant volumes of reservations. It is the latter that received higher number of votes in the scenario where respondents were asked to indicate the importance for their own company. Thus while the perception may be that there are a large number of channels available, in practice it is H-CRS-S-GDS-TA-C, H-CRS-C, H-CRS-GDS-TA-C and H-CRS-HW-C that are dominating actual sales in the industry.

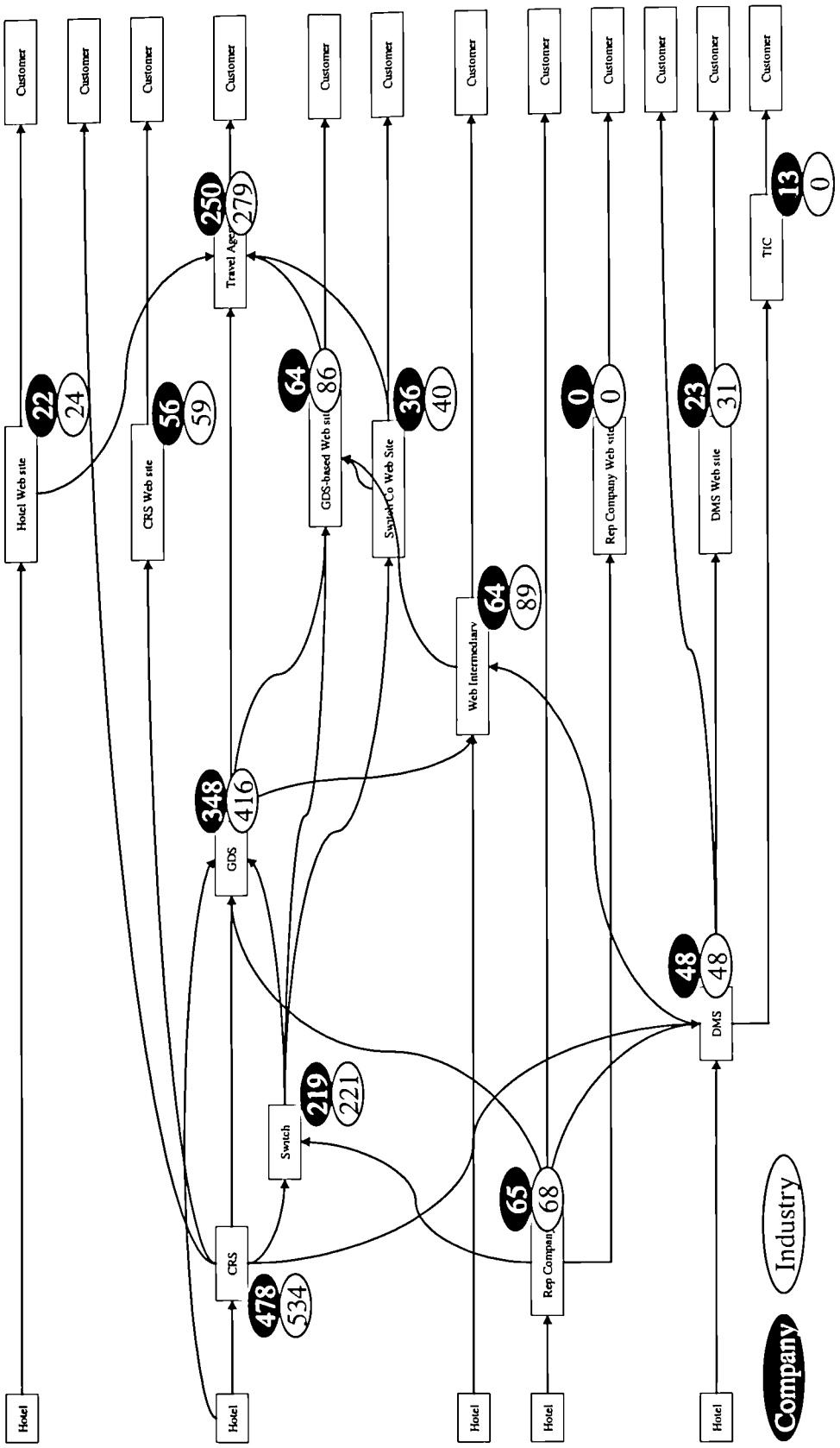


Figure 5.5 – Comparison of Node Analyses

In terms of identifying differences in perceptions as to the importance of the various systems that facilitate hotel electronic channels of distribution, a comparison of the node analyses for the two scenarios failed to identify any significant differences, as can be seen from Figure 5.5. The majority of the nodes received similar scores when both the industry in general and the respondents' own companies were being considered. The comparison does, however, further confirm both of the major trends noted earlier. The GDS to travel agent route can clearly be identified as the primary one of the customer, irrespective of the situation being analysed, while the combination of Web delivered channels taken collectively can now also be regarded as significant. While this statement summarises respondents' perceptions of the situation at present, it has also been shown that the hotel electronic distribution arena is rapidly evolving. Thus the question must be asked – which channels and nodes are likely to be significant in the future? This question is addressed in the next section.

5.4.1 Future of Each Distribution Channel

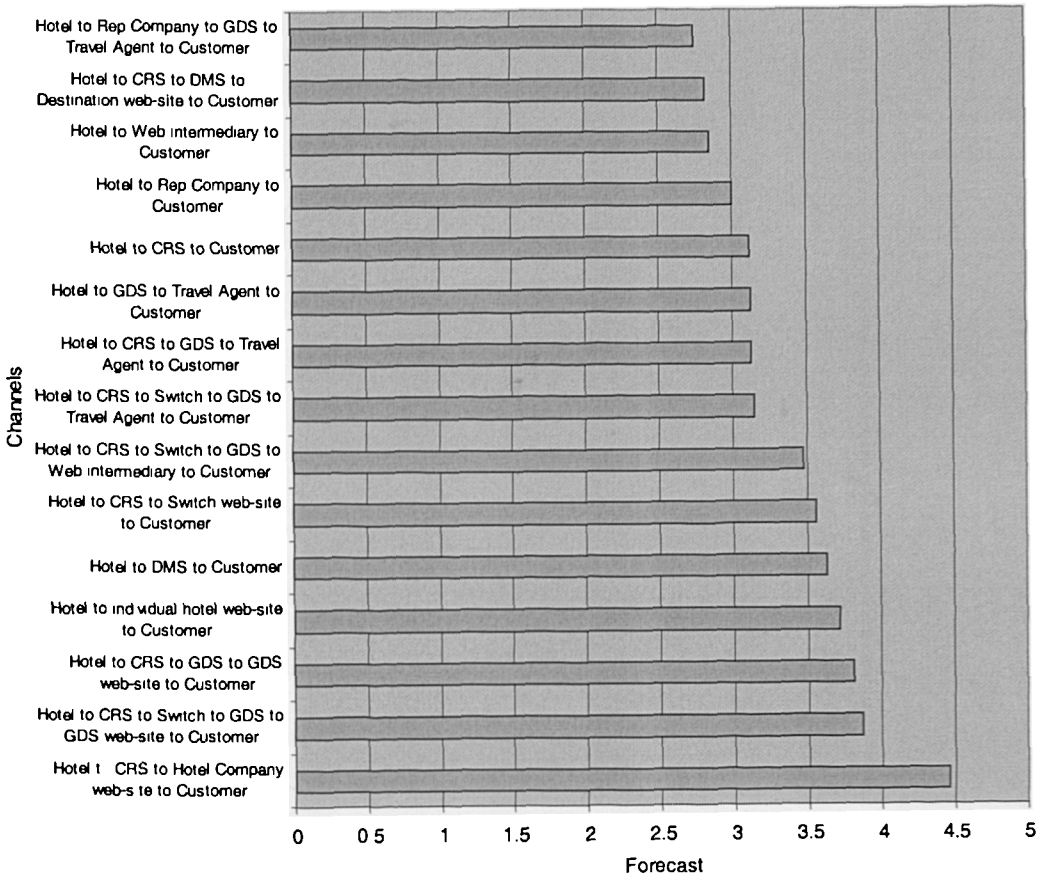
While the above analyses helped identify the range of channels that are currently available, it also demonstrated the pace of change in hotel electronic distribution. In addition to the "coopetition" trend discussed in Chapter Two (with existing chain participants cooperating with and competing with each other simultaneously), respondents' comments showed that new entrants are likely to have a significant effect on booking volumes in the future. Such suggestions prompt the question – are those channels that are currently regarded to be important likely to maintain their importance, grow or decline? To gain insight into this question, respondents were asked to indicate whether they felt that each of the suggested channels was likely to grow or decline over the next year. A five-point scale (ranging from one being

"greatly decline", through "remain the same" to five being "greatly grow") was used to measure their forecast. Their collective opinion as to the future of each channel is shown in diagrammatic form in Figure 5.6.

As was the case with the Delphi study, a positive attitude towards the future of hotel electronic distribution in general is immediately apparent from an analysis of the responses. As can be seen from Figure 5.6, only three of the suggested channels are in the range indicating that respondents feel that they will decline in the next twelve months. In addition, each of these channels has a mean score just marginally below the midpoint, and thus it is clear that there is little consensus that they will decline to any great extent. Moreover, the overall modal score was 4, with an arithmetic mean of 3.39, indicating that respondents feel the group of channels presented will grow in importance as a whole over the next 12 months. However, as with the expert panel forecast, one obvious caveat is necessary. Respondents to this survey were industry professionals working in the area of hotel electronic distribution, and thus a positive attitude towards the use of distribution technology was, to a large degree, to be expected.

Figure 5.6– Industry Perceptions of the Future of Hotel Electronic Distribution Channels

(1 = greatly decline, 3 = remain the same, 5 = greatly grow)



Analysing the individual forecast for each channel is also revealing. H-CRS-HW-C was the channel forecast to have the most extreme growth (mean score = 4.4), indicating that industry practitioners clearly see the Web as becoming an important channel of distribution for their product. The continuing importance of the GDS was also evident, with H-CRS-S-GDS-GW-C, H-CRS-GDS-GW-C and H-CRS-S-GDS-WI-C receiving mean scores of 3.87, 3.81 and 3.48 respectively, indicating that respondents feel that they would continue to grow. However, conspicuously absent from these routes is the travel agent node, indicating that perhaps industry

practitioners are recognising the changing role of the GDS, from systems solely servicing the travel agent community towards ones that directly address the end consumer. Such a theory is supported by a more detailed examination of the data (see Table 5.4), which shows that where the Web is the delivery mechanism to the customer, approximately three out of four respondents in each case gave a forecast of "Grow" or "Greatly Grow". However, where the GDS is followed in the distribution chain by the travel agent, their forecasts are less favourable and show greater variability. That is not to say, however, that respondents feel that the travel agent will decline in importance. Four routes involving travel agents were in the list presented to respondents, and of these, three are forecast to grow slightly (mean scores of approximately 3.2, with one forecast to decline slightly (mean score 2.8). Similarly, both of the "voice" channels (H-CRS-C and H-REP-C) are forecast to remain relatively static, with mean scores of approximately 3.00.

It is interesting to note that, as can be seen from Figure 5.6, five of the seven channels forecast to grow significantly feature both the CRS as a node in the distribution chain, and the Web as ultimate communications medium with the customer – irrespective of the penultimate node concerned. This would seem to give an indication of how respondents see chain hotel electronic distribution developing in the near future – centralised through a CRS, flowing through a variety of different routes and third parties, but ultimately being delivered to the customer using the Web as their communications medium. However the caveat mentioned earlier must again be noted. Respondents were corporate electronic distribution managers, who would have a (conscious or unconscious) bias towards a strategy of this type. Using a CRS / Web strategy would take advantage of current consumer trends, whilst at the same time

retaining control of distribution in centralised hands, thus strengthening their own positions. However, that being said, respondents also realised the importance and future potential of direct-to-consumer sales, with H-W-C and H-DMS-C also being in the group forecast to grow significantly. Perhaps the situation is best summarised by saying that respondents feel that the majority of the electronic distribution channels presented will grow over the next 12 months, with those flowing from the CRS and using the Web to communicate with the customer showing the greatest potential. Thus the hotel electronic distribution arena is likely to become even more complex, further amplifying the need for a channel evaluation methodology.

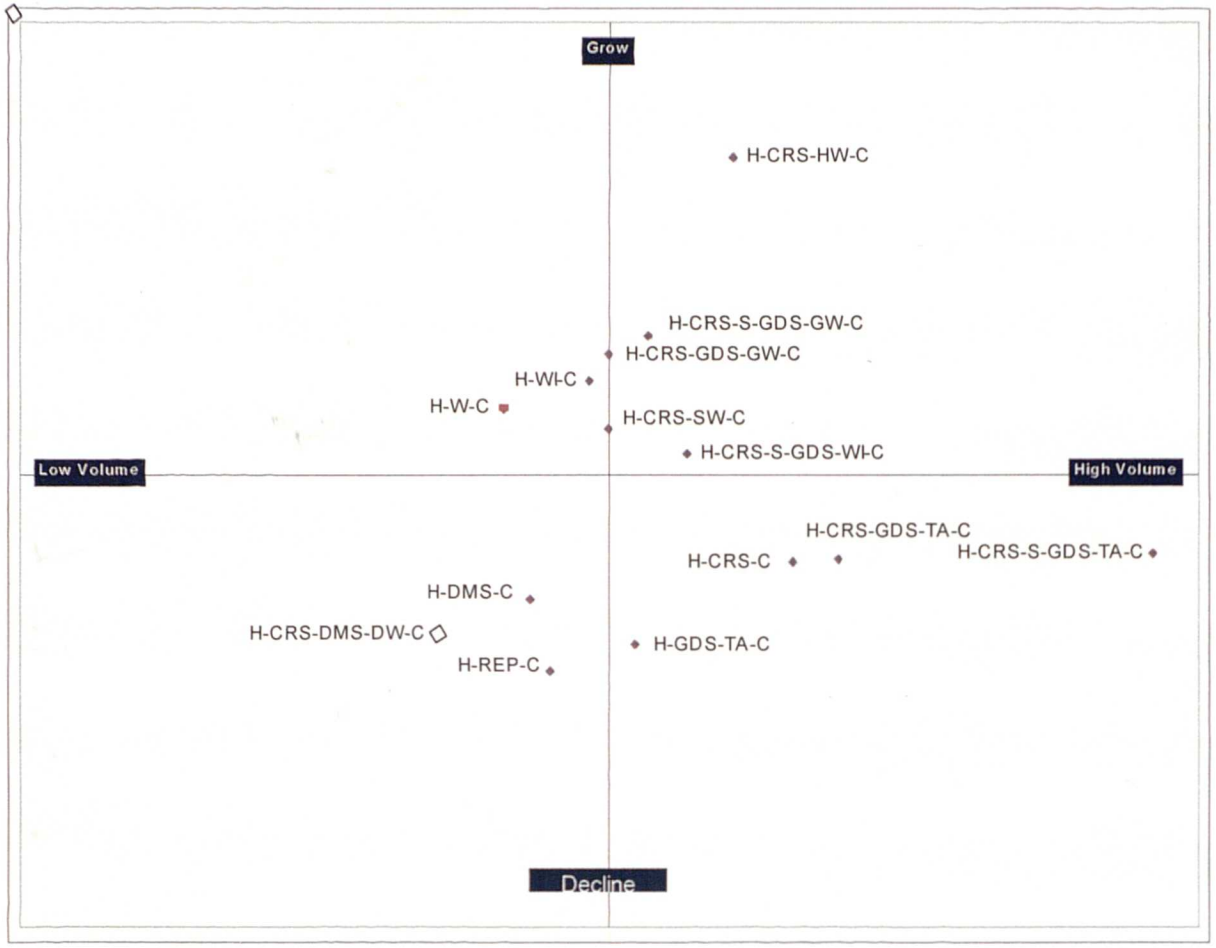
5.4.2 Identifying Key Distribution Channels for the Future

Of course growth on its own is not an indication of the future importance of the channels presented. To see this, the data on growth must be combined with the data on contribute-to-volume discussed earlier. Such an analysis allows predictions to be made as to the channels most likely to be significant in the future. A matrix combining the effect of volume (in general as opposed to for respondents own companies) and growth potential is presented in Figure 5.7. This uses the mean scores on both axes to segment the channels, allowing the potential of each to be demonstrated and isolating the ones on which hotels should focus their attention for success in the future.

Table 5.4 – Future of Electronic Distribution Channels – Detailed Scores – Industry Perceptions

Description	Greatly Decline	Decline	Remain the same	Grow	Greatly Grow	Mean	Mode	Median
Hotel to CRS to GDS to Travel Agent to Customer	0	5	15	9	0	3.14	3	3
Hotel to CRS to Switch to GDS to Travel Agent to Customer	1	9	8	14	1	3.16	4	3
Hotel to CRS to Customer	0	7	14	11	0	3.13	3	3
Hotel to CRS to Hotel Company web-site to Customer	0	0	2	12	16	4.47	5	5
Hotel to CRS to Switch web-site to Customer	0	4	9	16	3	3.57	4	4
Hotel to CRS to GDS to GDS web-site to Customer	1	1	7	17	6	3.82	4	4
Hotel to CRS to Switch to GDS to GDS web-site to Customer	0	2	5	20	5	3.88	4	4
Hotel to CRS to Switch to GDS to Web intermediary to Customer	0	1	12	14	0	3.49	4	4
Hotel to CRS to DMS to Destination web-site to Customer	0	10	13	5	0	2.83	3	3
Hotel to Rep Company to Customer	0	11	14	4	0	2.76	3	3
Hotel to DMS to Customer	0	7	12	7	0	3	3	3
Hotel to individual hotel web-site to Customer	1	3	5	18	3	3.64	4	4
Hotel to Web intermediary to Customer	0	2	9	13	5	3.73	4	4
Hotel to GDS to Travel Agent to Customer	2	5	16	5	0	2.86	3	3

Figure 5.7 – Current Volume Vs. Forecast Potential



Examination of the matrix reveals several clusters of channels with distinct characteristics. Firstly, a cluster of similar channels can be seen in the top right hand quadrant, which combines a high current volume with a high forecasted growth. Each has the hotel CRS as its first node and uses the Web as its ultimate communications medium with the customer. There are no channels fitting this description located in any other quadrant, lending weight to the theory formed earlier that the CRS will continue to grow in importance within its role as the engine of hotel electronic distribution, but that the way in which it will interact with the consumer will increasingly be Web based and dominated by third parties. Further evidence of this can be seen from the channels located in the top left hand quadrant (i.e. those that currently have a relatively high contribution to volume but are forecast to become less important in the future). Although their forecast decline is relatively minor, it is here that each of the traditional hotel electronic distribution channels (H-CRS-S-GDS-TA-C, H-CRS-GDS-TA-C and H-CRS-C) can be found. As was discussed earlier, collectively these three routes are currently the main electronic routes to the customer in use by hotels, but it is clear that respondents feel that they are starting to decline and will be replaced by alternative channels. Channels in the upper left hand quadrant are obvious candidates, as, while they are currently less important, they are the ones forecast to grow in the future and thus warrant attention. The quadrant contains only two channels (H-WI-C and H-W-C), and once again these appear to have similar characteristics. Both are simple, involve just a single node and involve distribution directly from the hotel without passing through the CRS. Thus this is a separate trend to that noted above; although it does have the common point that the Web is used as the communications medium. As with the CRS to Web delivered cluster noted above, these two are the only channels present on the matrix that have such characteristics,

and while their current contribution to volume is low, their forecast for the future is well above the average and thus they are clearly channels on which hotel companies should focus more attention. Unfortunately the pattern is less clear in the bottom left hand quadrant. These are the least attractive channels as they combine a low contribution-to-volume with a low forecasted growth. As can be seen from Figure 5.7, the analysis places four channels in this quadrant, including both of the channels that involve Destination Management Systems. As was discussed earlier, this does not mean that DMS as a concept will not be successful, just that its applicability to chain hotels is thought likely to further decline. H-REP-C is also listed here, as is H-GDS-TA-C. Both of the latter are often though of as similar to the channels in the top right hand quadrant. However, neither have the CRS as their initial node and neither use the Web as their delivery mechanism, which may explain the industry's pessimism about their future potential.

Thus the matrix analysis supports many of the theories developed earlier. It has helped to confirm the role of the hotel CRS as the engine behind much of hotel electronic distribution, helped identify the importance of the Web as the ultimate delivery medium to the consumer and highlighted the increasingly threatened positioned of the travel agent. It also highlights how important third parties, in particular those who interact with the customer over the Web, will become in the hotel electronic distribution chain.

5.5 Evaluating Hotel Electronic Channels of Distribution

As was discussed in Chapters Two and Four, navigating the maze of electronic distribution channels currently available to hotels is confusing, and knowing which to use for a particular property is clearly a difficult task. The Delphi study described in Chapter Four used a panel of experts on hotel electronic distribution to develop and validate a portfolio of evaluation criteria that could be used for assessment purposes both when channels are being considered for adoption and when their ongoing use is being evaluated. In contrast to much of the published theory, the Delphi study found that a variety of technical and operational factors were as important, if not more so, than the financial criteria traditionally proposed to evaluate IT related projects.

However, as a result of the nature of the exploratory research approached utilised, the findings of the Delphi study must be regarded as indicative. Thus generalizations as to the behavior and attitudes of the industry as a whole cannot be inferred from its results. The Delphi findings can best be regarded as a proposal or an ideal, and further research was necessary to establish their acceptability and applicability in practice. Related to these findings are three important additional questions; do hotel companies currently evaluate their electronic channels of distribution; if so, how are such evaluations carried out; and is there agreement that the factors identified by the Delphi study have utility in performing such evaluations? The latter part of the electronic survey with industry practitioners addressed these issues. As respondents were questioned both about their practices in relation to the adoption and the continued use of channels, their responses are presented separately below.

5.5.1 Evaluating The Adoption Of An Electronic Distribution Channel

To avoid influencing their answers, respondents were initially asked an open question requesting them to describe how they would evaluate the adoption of an additional electronic channel of distribution. A total of 98 suggestions were received. As in prior questions, these were evaluated using content analyses techniques to reveal similarities and patterns among the freeform responses. Within Table 5.5, each of the suggestions has been categorised into one of the broad categories identified in the Delphi study to facilitate discussion and comparisons.

Table 5.5 – Classification of Adoption Evaluation Factors

Classification	Number
Financial	33
Operational	23
System Provider	13
Marketing	12
Managerial	9
Technical	7

When examined at a macro level, financial factors stand out as being foremost on the minds of industry respondents when considering the adoption of a channel. Nearly one third of all the suggestions (33) fell into this category. Operational issues were the next most frequently cited factors (23), followed by system provider issues and marketing factors (with 13 and 12 citations respectively), and lastly managerial and technical issues (with 9 and 7 citations respectively).

A more in-depth examination of the suggestions in the financial category reveals that they fall into two distinct groups – revenue orientated factors and cost orientated factors. The majority of the financial suggestions focused on the revenue side of the equation, with most suggesting that the channel should provide additional revenue, either by increasing business volumes or by having a positive effect on ADR (13). Costs were also cited by 16 respondents – with varying numbers specifically mentioning start-up costs (4), transaction costs (5) and other ongoing costs (4). However only a very small minority (4) combined both of these issues and specifically mentioned Return on Investment or another formal financial evaluation technique. In the operational factors category, the most commonly cited factor was also the most commonly mentioned overall. Database maintenance issues - specifically that any new channel should interface / integrate with existing databases and not need to be managed separately – were cited 18 times, reflecting the importance of this issue to industry practitioners. Other operational issues included that it should have revenue management capabilities (3) and that it should be responsive and flexible enough to be capable of being used to distribute distressed inventory (2). Issues related to the system provider were also cited. These included the business plan / perceived future potential of the channel provider (8), its reputation within the industry (3) and its prior performance for other companies (2). Marketing issues included how well the channel matches the company's target markets (8), and its affect on consumers' awareness of the company's brand (2), while the main strategic issues mentioned were the effect of adopting the channel on existing channels (4) and competitive positioning (5). Technical factors were the least commonly mentioned, and included the ease of use / convenience of the channel from

the customers' perspective (5) and the technological infrastructure needed to operate the channel (2).

5.5.2 Validating The Top Ten Adoption Factors

It is clear from the above that the decision as to whether to adopt a hotel electronic channel of distribution is multifaceted from the perspective of those actually making such decisions in the industry. While certain issues – in particular database maintenance and cost – were mentioned by the majority of respondents, a wide range of other issues were also cited and may need to be taken into account in the evaluation decision. From the discussion above, it can be seen that analyses appear to be performed in a non standardised fashion – with major differences in what is considered depending on who is performing the evaluation and their personal priorities. There does not appear to be any commonly accepted methodology throughout the industry for evaluating channel adoption. While the success of such an approach is uncertain, it would be of benefit to have a clear set of guidelines and a set of objective criteria that could be used in such situations. As was mentioned above, a set of possible criteria was developed as part of the Delphi study discussed in Chapter Four, where an iterative process with a panel of experts was used to develop, validate and prioritise a list of the factors felt to be important when evaluating the adoption of a channel. The suitability and acceptability of this list of factors for use as decision criteria for channel adoption were the next subjects of investigation.

Following the open question discussed above, respondents were presented with the list of factors developed in the Delphi study. These were presented in alphabetical order to minimise bias, and respondents were asked to indicate how important they felt each to be when considering the adoption of an additional electronic distribution

channel. Responses were limited to a four-point scale ranging from a low of "Of no importance" to a high of "Essential".

Analysis of the findings of the quantitative question reveals different priorities to those identified in the open question on channel adoption evaluation. While the factor that received the highest number of citations in the earlier question (integration from a data maintenance perspective) also has the highest mean importance score, the pattern of relative importance of the other factors is very different. In contrast to earlier, it is technical and operational factors (rather than financial) that are perceived to be most important in the channel adoption decision. Security, speed, traffic levels and ease of use all received high relative importance scores, further demonstrating the difference between what factors need to be considered in the evaluation decision and those that need to take priority. That being said, all of the factors presented received relatively high scores (overall mean of 3.18), and each was above the midpoint of 2.5, indicating that appropriate factors were presented for validation. Such a viewpoint is confirmed as respondents were also asked to indicate if there were any factors not included on the list that they felt needed to be taken into consideration when deciding whether to start using a channel for the first time. Only a very small number of suggestions were received, mostly reiterating the points about database maintenance, incremental / re-channelled business, the professionalism of the system supplier and the fee structure cited in the earlier discussion. However, as each of these points was only mentioned by a small number of respondents, there appears to be general agreement with the list presented, and that the factors that should be taken into account when evaluating the adoption of a channel for the first time have been correctly identified. These are presented in Table 5.7 in order of descending perceived importance.

Table 5.6 – Industry Perception of the Importance of Adoption Factors

Factor	Of no importance	Of minor importance	Of major importance	Essential	Weighted Importance Score	Mean Score	Technical	System Provider	Management	Operational	Marketing	Financial	Technical
Integration with existing channels from a data maintenance perspective	0	2	18	14	114	3.35				x			
Security	0	4	14	16	114	3.35	x						
Speed at which information / rates can be updated	0	4	16	14	112	3.29	x						
Speed at which transaction can be completed	0	4	16	14	112	3.29	x						
Potential of the channel to open up new market segments	0	4	18	12	110	3.24					x		
Initial capital cost	0	5	19	10	107	3.15						x	
Operational ease of use from the hotel's perspective	0	3	20	10	106	3.21				x			
Traffic levels	0	4	22	8	106	3.12	x						
Potential of the channel to address current market segments	0	9	20	5	98	2.88					x		
Reputation of the system provider	1	6	23	4	98	2.88				x			

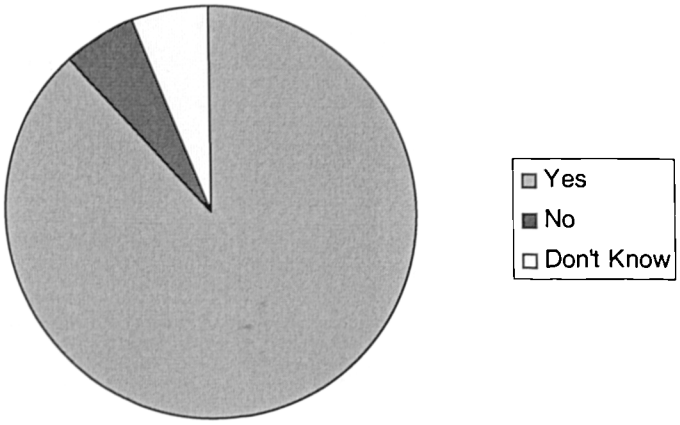
Table 5.7 – Validated Adoption Evaluation Factors

Factor	Rank
Integration from a data maintenance perspective	1
Security	2
Speed at which information / rates can be updated	3
Speed at which transaction can be completed	4
Potential of the channel to open up new market segments	5
Initial capital cost	6
Operational ease of use from the hotel's perspective	7
Traffic levels	8
Potential of the channel to address current market segments	9
Reputation of the system provider	10

5.5.3 Evaluating The Continued Use Of An Electronic Distribution Channel

Respondents were also asked to indicate if they currently evaluate the performance of their existing electronic channels of distribution. As can be seen from Figure 5.8, nearly 90 per cent of respondents answered positively. (It's interesting to note, however, the relatively high non-response rate for this question in comparison with the rest of the survey. In addition to two people answering "Don't Know", only 34 out of 42 respondents choose to answer this question. While there may be an element of attrition because of the length of the questionnaire, subsequent questions received higher response rates and thus such a conclusion is unlikely. It could be speculated that many of the non-respondents either did not know the answer to this question or, more likely, that their companies do not perform formal evaluations on a regular basis and they did not wish to admit this in their responses).

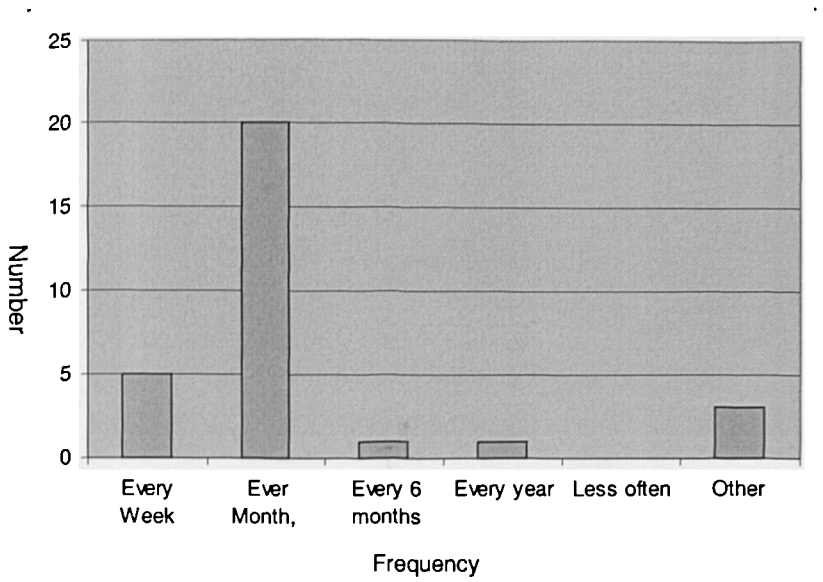
Figure 5.8 – Companies That Evaluate Their Existing Electronic Channels of Distribution



Respondents were then asked to indicate how often such evaluations were carried out in their companies. As can be seen from Figure 5.9, over two-thirds of respondent companies carry out such evaluations on a monthly basis, while another fifth do so every week. Under "Other", respondents indicated both quarterly and also that they evaluated channels monthly on production but daily on response. Chi-squared analysis failed to identify any significant differences in the pattern of evaluations based either on brand, number of properties or number of rooms represented by the brand.

As with the evaluation of channel adoption described above, respondents were initially asked an open question requesting them to describe the process they use to evaluate existing channels. Once again, responses were analysed using content analysis techniques to identify themes and trends. A summary of the results of this analysis is presented below; with the numbers in brackets in each case represent the number of citations of the factor mentioned.

Figure 5.9 – Frequency of Evaluations



The most frequently cited method was using reports detailing the performance of the channel (18). Suggestions as to the content of these reports varied greatly, but included data on the amount of business produced– either expressed as the number of net bookings (8), the number of room nights generated (3), the revenue generated (5) or overall usage of the channel irrespective of whether it resulted in bookings or not (4). Other related suggestions included the effect of using the channel on average rate (3), and the number of extra bookings, incremental revenue or new customers produced by the channel (5). Comparison of actual performance with forecast or budgeted figures was also cited (4), as was the comparative analysis of the channel's performance against both historical data and the performance of alternative (electronic and non-electronic) channels (3). Customer service issues – i.e. how well / or badly customers are reacting to the use of the channel in question – was also mentioned by a small number of respondents (3), as was the effect that the channel was having on the company's market share (3). The cost of using the channel was cited by four respondents, as were database maintenance issues. However, in the latter case, it might be speculated that the finding in relation to database

integration from the adoption factors discussed earlier might be having an effect on responses to this question. When evaluating the adoption of a new channel, respondents indicated that the integration of the channel with existing inventory databases was, to a large extent, essential. As a result, the issue of database integration may have been regarded as a given, and thus further mention of it though not to be necessary. Lastly, a single respondent in each case cited a small number of additional technical factors (including reliability issues such as uptime, accuracy, and response speed).

Thus, the main emphasis of respondents' answers appears to be on performance issues. While a number of other issues were also cited, these were mentioned far less frequently and received less attention in the free form answers than those relating to the performance of the channel. Taken as a whole, responses indicate that, when evaluating the performance of an electronic channel of distribution, industry practitioners focus on how the system is working in practice – how much business it is bringing in, at what rate and at what cost. However, it should be pointed out that while reporting mechanisms seem well developed, evaluation methods seem relatively ad-hoc, with little evidence that formal techniques are being used. Most respondents seem to be using a well defined reporting process reflecting channel performance, but few seem to have formal guidelines as to when to continue / discontinue using a channel. Performance evaluation seems to be intuitive rather than based on commonly accepted guidelines or principles. Once again the success of such policies is unclear, but there would clearly be some utility in having a concise set of guidelines to help in such evaluations.

Table 5.6 – Industry Perception of the Importance of Adoption Factors

Factor	Of no importance	Of minor importance	Of major importance	Essential	Weighted Importance Score	Mean Score	Technical	System Provider	Management	Operational	Marketing	Financial	Technical
Integration with existing channels from a data maintenance perspective	0	2	18	14	114	3.35				x			
Security	0	4	14	16	114	3.35	x						
Speed at which information / rates can be updated	0	4	16	14	112	3.29	x						
Speed at which transaction can be completed	0	4	16	14	112	3.29	x						
Potential of the channel to open up new market segments	0	4	18	12	110	3.24					x		
Initial capital cost	0	5	19	10	107	3.15						x	
Operational ease of use from the hotel's perspective	0	3	20	10	106	3.21				x			
Traffic levels	0	4	22	8	106	3.12	x						
Potential of the channel to address current market segments	0	9	20	5	98	2.88					x		
Reputation of the system provider	1	6	23	4	98	2.88				x			

Table 5.8 – Industry Ranking of Continuation Evaluation Factors

Factor	Of no importance	Of minor importance	Of major importance	Essential	Weighted Importance Score	Mean Score	Technical	System Provider	Management	Operational	Marketing	Financial	Technical
Achieved revenue from channel	0	0	18	15	114	3.45	x						
Transaction cost	0	3	13	16	109	3.41	x						
Security of the channel	0	6	12	14	104	3.25	x						
Speed at which information and rates can be updates	0	5	14	13	104	3.25	x						
Speed at which transaction can be completed	0	4	16	11	100	3.23					x		
Potential of the channel to open up new market segments	0	4	19	10	105	3.18						x	
Integration with existing channels from a data maintenance perspective	0	6	15	11	101	3.16				x			
Operational ease of use from the hotel's perspective	0	6	15	10	97	3.13	x						
Achieved volume of transactions	0	7	16	10	102	3.09					x		
Ability to recognise individual customers	0	7	20	5	94	2.94				x			

5.5.4 Validating The Top Ten Continuation Factors

As with adoption factors, respondents were subsequent presented with the list of relevant evaluation factors identified in the Delphi study and asked to indicate their importance when evaluating an existing hotel electronic channel of distribution. As can be seen from Table 5.8, their responses confirm many of the points discussed above. "Achieved revenue from channel" was the top-ranking factor, with all respondents rating it as either "Of major importance" or "Essential". All of the decision factors suggested received high scores (mean = 3.21) and all were above the midpoint of 2.5. Furthermore, when respondents were asked if there were any additional evaluation factors that they felt should be taken into account when evaluating the continued use of an electronic channel of distribution, only a single set of suggestions was received. This restated what the respondent had already suggested in the open question and thus had already been taken into consideration. Therefore, based on the responses to the survey, the correct range of factors for the evaluation of existing hotel electronic channels of distribution has been identified and validated by the industry. These are summarised in Table 5.9.

Table 5.9 – Validated Continuation Evaluation Factors

Factor	Rank
Achieved revenue from channel	1
Transaction cost	2
Security of the channel	3
Speed at which information and rates can be updates	3
Speed at which transaction can be completed	5
Potential of the channel to open up new market segments	6
Integration from a data maintenance perspective	7
Operational ease of use from the hotel's perspective	8
Achieved volume of transactions	9
Ability to recognise individual customers	10

5.6 Conclusion

This chapter has presented the findings of an electronic survey carried out among electronic distribution managers in the major hotel chain brands with the primary aims of establishing their current channel evaluation practices and validating the list of evaluation factors suggested in the Delphi study discussed in Chapter Four. Prior to addressing this issue, their perceptions as to the relative importance of the channels current available for both chain hotels in general, and their own brand in particular, was investigated. In both cases, the range of channels presented was validated as those currently being the most important for electronic distribution in chain hotels. Overwhelmingly H-CRS-S-GDS-TA-C is seen as the most important single route at present. Similarly the other traditional routes, i.e. those that flow through the GDS

and the travel agent, are also perceived as being important in both cases. However routes that utilise the Web have grown in terms of their importance. Despite scepticism in the published literature, respondents indicated that a significant percentage of business volumes (both for their own companies and for the industry in general) now use the Web as their communications medium with the customer. However this percentage is spread out over a large number of routes, each of which is individually less significant, but which collectively have a major effect. The pattern of distribution that seems to be working for the chains is to utilise a wide range of distribution channels to interact with the customer, but to feed each of these channels off the CRS - and to a lesser extent the GDS- to maintain control and insure consistency in terms of rates and availability.

An analysis of the nodes through which these channels flow reveals the various systems and intermediaries that facilitate hotel electronic distribution. It is clear that (for this respondent group at least) the majority of the "traditional" systems being used by the hotel industry have retained their importance. The hotel CRS is clearly seen as the engine driving the majority of hotel electronic distribution, being the first node through which the vast majority of routes flow on their way to the customer. The GDS are the next most important node (irrespective of whether respondents were referring to their own company or the industry in general), while travel agents were third most important. This CRS to GDS to travel agent route is clearly still key, although, when taken collectively, the combination of all the Web delivered routes is approaching if not overtaking this route in terms of its perceived importance. Thus while the importance of the travel agent is unlikely to decline, it may be surpassed by

channels that use Web delivered media to communicate directly with the end customer in the near future.

The respondent group had a favourable attitude towards the future of electronic distribution as a whole, indicating that they, on average, felt that the range of channels presented would collectively grow. As regards individual channels, respondents indicated that the GDS based channels would continue to grow slightly, with higher growth in those channels that ignore the travel agent and instead use the Web as their communications medium with the customer. This parallels other findings, where each of the Web based channels suggested to respondents was forecast to either grow or greatly grow. Thus a picture of how hotel electronic distribution in the future might operate emerged from the findings. The existing GDS to travel agent routes will maintain their absolute position, but will decline in relative terms as the greatest potential is from routes that are based on a CRS, subsequently flow through an increasingly complex network of third parties and interconnected channels but ultimately delivered to the customer using the Web as their communications medium. Such a scenario implies that the hotel electronic distribution arena will become even more complex and increase in density. This has a variety of implications in terms of cost, control, and image and thus, the need for an effective channel assessment methodology will be even more critical.

Respondents were also questioned as to how they currently evaluate electronic channels of distribution, both at the time of adoption and when assessing their continued use. It became clear that a wide range of factors need to be taken into account when considering the adoption of a channel for the first time. Although the

main emphasis of industry practitioners in this case was on financial factors, the single most important factor identified was that of database maintenance – i.e. that the new channels should either utilise or integrate with an existing database – preferably the CRS – for inventory and reservations purposes. Respondents also confirmed the importance of the factors identified by Delphi participants as being most important to take into consideration when evaluating the adoption of a channel. Respondents were also asked to indicate if they evaluate the channels that are currently in use in their companies. Unsurprisingly, most indicated that such evaluations do take place, with the majority performing such evaluations on a monthly basis. In contrast to the factors that were though essential when evaluating the adoption of a channel, continuation assessment seems to be focus more on the performance of the channel in question, with the most frequently cited being using performance reports in relation to each channel. These focus on how much business the channel in question is generating, at what rate and at what cost. However, while reporting mechanisms seem well developed, evaluation methods seem relatively ad-hoc, with little evidence that formal techniques are being used. Few respondents seem to have formal guidelines as to when to continue / discontinue using a channel. As was discussed, performance evaluation seems to be intuitive rather than based on commonly accepted guidelines or principles, and while the success of such a strategy is unclear, there would clearly be utility in having a concise methodology to help in such evaluations.

Overall the industry survey has confirmed the findings of the Delphi Study. The industry practitioners have validated the expert panel's views on the current state of hotel electronic distribution and future developments. Similarly the range of evaluation factors suggested by the Delphi study for both adoption evaluation and

continued use assessment has been confirmed as both suitable and applicable by the industry group. Based on these suggestions, as modified by the findings of the industry survey, a channel evaluation methodology for hotel electronic distribution channels has been developed. The preliminary model is presented in Chapter 6.

Chapter Six

Chapter Six – Conclusions

Chapters Four and Five presented the results of two interlinked research studies focusing on the development of a methodology to help in evaluating hotel electronic channels of distribution. Initially, a range of possible evaluation factors were identified, validated and prioritised using the Delphi methodology. The use of evaluation techniques by electronic distribution managers in the hotel industry was subsequently investigated, and the applicability and acceptability of each of the factors identified in the Delphi study was assessed. This chapter brings the overall research study to a conclusion. Its purpose is to summarises the major research findings, contributions and conclusions of the study as a whole, and outline a range of suggestions for further research, based mainly on the range of unresolved issues identified during the course of the study. It also describes a computer based decision support tool that was developed as an illustration of how the evaluation factors identified in the study could be used in practice. As such, the model encapsulates much of the knowledge gained during the course of the project, and an illustrative case study highlights the utility of such a tool for use by industry practitioners in the hotel electronic channel of distribution evaluation decision.

6.1 Background

As was discussed in Chapter Two, for the hotel product, channels of distribution provide "*sufficient information to the right people at the right time and in the right place to allow a purchase decision to be made, and provide a mechanism where the consumer can make a reservation and pay for the required product*". Distribution channels are a cornerstone of competitive strategy (WTO 1997), and represent the

critical link between any organisation and the marketplace. Effective distribution is particularly important with the perishable accommodation product, as a room left unsold on a particular night cannot be stored for subsequent resale and thus its revenue is lost forever. As a result, selling each room each night at an optimum price is critical to the overall profitability of the hotel. However the effectiveness of the distribution process is dependent on two interlinked elements – information and convenience. As was discussed in Chapter Two, information is acknowledged to be the lifeblood of the tourism sector. The intangibility, heterogeneity and diversity of tourism products mean that consumers are highly dependent on information to help them differentiate among competing products. Thus consumers seek out as much information as possible in order to bridge the gap between their expectations and experience, making the fast, efficient exchange of information essential for effective distribution. Related to this is the issue of convenience – both in terms of finding the appropriate information and also in terms of facilitating the reservations and payment processes. According to Stern (1997), reducing the amount of time, energy and effort expended in acquiring goods and services has become as important, if not more so, as offering a reduction in price. This is particularly true where the sale is facilitated through an intermediary, who by definition has an interest in handling the most easily sold products and may well direct clients to competing suppliers if their product is more easily accessible (Bennett 1993). One of the enablers in distributing information and making the reservations process more convenient is information technology, which, as a result, has become an almost ubiquitous feature of hotel distribution.

In the past, hotel electronic distribution channels were relatively simple, with most electronic reservations flowing through the CRS to GDS to travel agent route. Channels were effectively linear, with each node in the distribution chain having a mutually supportive role to play. However, as was highlighted in Chapter Two, the development of the World Wide Web as a commercial medium in 1994 acted as a catalyst, causing a revolution in the hotel electronic distribution arena. In addition to cooperating with each other as they had done in the past, the majority of systems and organisations involved in hotel electronic distribution began competing with each other by distributing directly to the end customer. At the same time, cooperation increased as many developed non-exclusive virtual alliances with each other in an effort to provide a full service offering to the consumer. Lastly, a variety of new players have also entered the hotel electronic distribution arena, positioning themselves as virtual intermediaries for the hotel product. These three developments have made the hotel electronic distribution arena infinitely more complex, making it difficult for hoteliers to know on which channels they should distribute their products. To date, most hotel companies have adopted a shelf-space approach of "more is better" as a solution to this problem – distributing their products on all of the channels of which they are aware. However such an approach is unlikely to be successful in the long run due both to the recent exponential growth in the number of channels available and to the fact that the use of each channel has costs associated with its adoption, management and use. As Dev and Olsen (2000) point out, "the distribution process is messy and getting messier, owing to the many channels and rates ... there is a need to simplify the distribution process". There is agreement that hotels need to comparatively evaluate electronic channels of distribution, both at the time of their adoption and during their actual use, to assess their suitability and also to set priorities

for the use of scare resources. The question arises, therefore, as to how such evaluations should be carried out?

The literature suggests that information technology related projects should be evaluated in one of two manners – from a financial perspective or from a strategic perspective (Lubbe and Remenyi 1999). Financial approaches include cost benefit analysis, value added approaches, productivity based approaches and capital appraisal techniques. However such techniques suffer from severe limitations when evaluating electronic distribution channels in that both costs and benefits cannot usually be clearly defined. Furthermore, the majority of financial techniques tend to take a short-term approach, which may be inappropriate given the acknowledged strategic importance of electronic distribution systems. However evaluation from a strategic perspective is also problematic as when technology becomes a strategic issue, measurement difficulties are enhanced since "there are no commonly accepted concepts to measure their proper value and no agreement as to which variables to measure" (Olsen 1998). Thus there is no common denominator and evaluating performance becomes more subjective as projects "can be looked at differently depending on the vantage point chosen" (Hitt and Brynjolfsson 1996), which limits the validity of evaluations carried out from this perspective. Thus deficiencies exist in the approaches suggested by the literature. The dilemma, therefore, is what can or should be used in their place? Current thinking on IT related project evaluation recommends a multi-dimensional approach involving both qualitative and quantitative components. As was discussed in Chapter Two, authors stress that a broad portfolio of factors – not just the costs and benefits – should be taken into account in the evaluation decision to help insure that the real value of implementing a project is

assessed and to minimise the effect of the deficiencies noted above. The question thus arises as to what factors are important in evaluating hotel electronic channels of distribution?

6.2 Research Findings

As was discussed above, one of the key questions facing hoteliers is how they can maximise the use of scarce organisational resources by optimising the portfolio of distribution channels to which they subscribe. At present, navigating the maze of hotel electronic distribution channels is clearly confusing. New technologies are surfacing all the time, making the question more prevalent than ever. Thus there is clearly a need for a set of objective criteria that can be used to comparatively evaluate electronic channels of distribution. Unfortunately, as was highlighted in Chapter Two, there currently is no commonly accepted holistic theory as to how information technology related projects in general, or hotel electronic distribution channels in particular, should be evaluated. As a result, primary research was necessary to establish how such evaluations should be carried out. The lack of published research on the area meant that a grounded theory approach initially had to be adopted to address the research question. After consideration of alternative research methods, a panel of experts was iteratively surveyed using the Delphi methodology to establish an initial list of factors that might be useful in evaluating hotel electronic channels of distribution both when the channel in question is initially being considered (dubbed "adoption factors") and when its ongoing use is being assessed (dubbed "continuation factors"). Based on the views of the expert panel, a range of possible decision factors were identified, and these were subsequently validated and prioritised using the

Delphi process to generate a ranked list of the most important factors to be considered in the two situations. These are summarised below.

When evaluating the adoption of a channel for the first time, operational and technical issues need to be at the forefront of the factors taken into consideration. These include issues such as operational ease of use, transaction speed, update speed, traffic levels, integration and security. The initial capital cost also needs to be considered, as does the channel's ability to service both existing and additional market segments. However, in contrast with the findings of the literature survey discussed in Chapter Two, it is clear that it is how the system will operate in practice – rather than how it will perform financially or contribute strategically – that is thought to be the prime consideration in the channel adoption decision. The continuation evaluation decision, on the other hand, appears to be comparatively more complex. Not only were more criteria suggested for such evaluations, but also there was less agreement on their relative importance. The conclusion was that the evaluation decision should be multifaceted, incorporating financial, marketing, strategic, operational and technical aspects. Financial aspects, particularly the revenue side of the equation, are more important than in the adoption evaluation decision, as factors such as transaction cost and achieved revenue / volume were identified as being particularly relevant in this situation. Technical and operational issues such as ease of use, speed and integration were also found to be important, thus supporting the argument that the system's performance in practice, both financially and operationally, should be the key determinant as to whether to continue to use it. At the same time, the channels future potential was also thought to be relevant in the continuation evaluation decision, as

while a channel might not be performing adequately at present, its use should be continued if it has the potential to contribute substantially in the future.

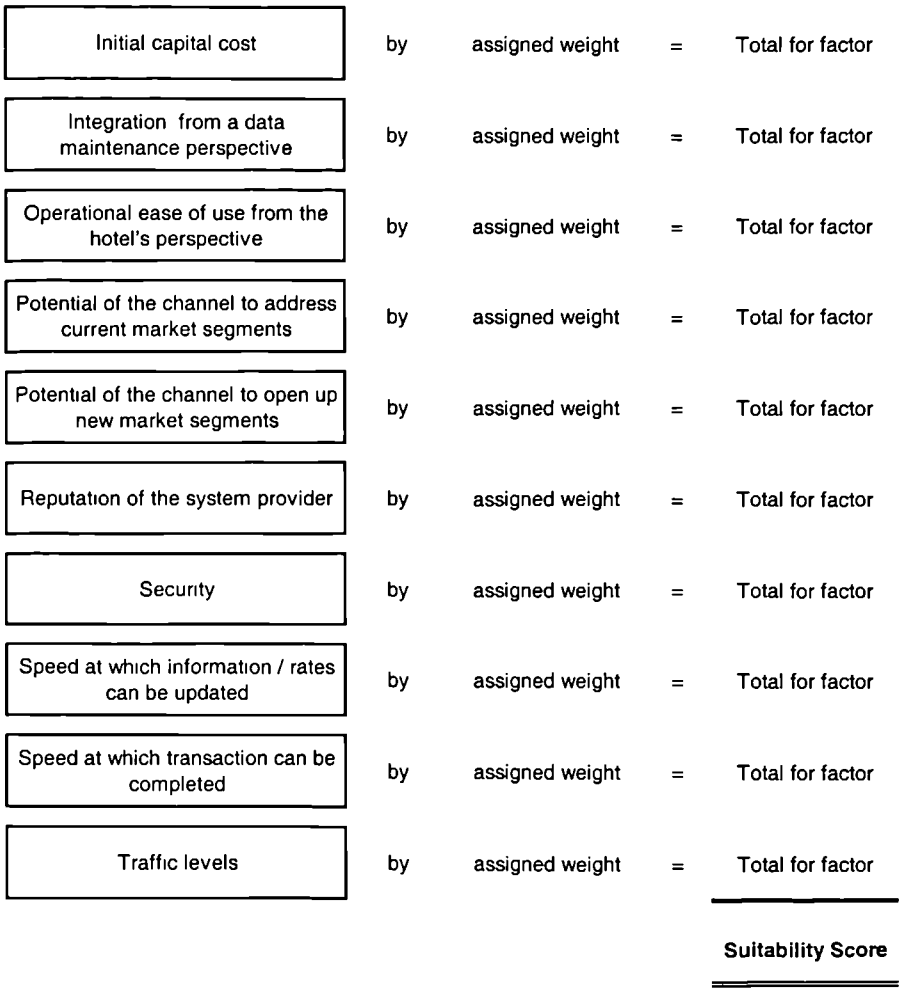
Thus the Delphi study helped to generate, validate and prioritise a portfolio of factors that, according to expert opinion, could be used to evaluate hotel electronic channels of distribution. However, because of the exploratory nature of the Delhi method, such findings could only be regarded as indicative. Inferences as to the behavior and attitudes of subjects outside of the expert group could not be generalized from them, and thus it was necessary to test their acceptability and applicability with the industry as a whole. To that end, an electronic survey was carried out among electronic distribution managers of the major worldwide hotel brands to establish current evaluation practices and to assess agreement with the range of evaluation factors identified. The survey findings were in broad agreement with those of the Delphi study. Industry practitioners felt that a wide range of factors need to be taken into account when considering the adoption of a channel for the first time. Although their main emphasis was on financial factors, the single most important issue identified was that of database maintenance – i.e. that the new channels should either utilise or integrate with an existing inventory database – preferably the CRS – for inventory and reservations purposes. In contrast, the continuation assessment factors identified focused more on the performance of the channel in question. Most industry respondents cited performance reports - focusing on how much business the channel is generating, at what rate and at what cost - as their main method of assessing continued use of a channel. However, while reporting mechanisms seem well developed, evaluation based on these reports seem relatively intuitive and ad-hoc, with little evidence that formal techniques are being used. While the success of such

practices is unclear, there would clearly be utility in having a concise, well defined, methodology to help in such evaluations. Overall the industry survey confirmed the factors identified in the Delphi study as being both suitable and applicable for the evaluating of hotel electronic channels of distribution in practice. Thus a valid set of decision factors has been empirically developed and validated for use in the evaluation of hotel electronic channels of distribution by hotel chains.

Based on these suggested factors, a model that facilitates the comparative analysis of alternative channels has been developed. This is illustrated in Figure 6.1, and is designed to reflect that fact that each of the factors identified – although sometimes contradictory, needs to be combined to establish the overall suitability of the channel being assessed. Two challenges were apparent in the development of the model. Firstly, not all factors were thought to be equally important. Secondly, as was discussed in Chapter Two, there is unlikely to be any definitive optimal solution that will work for the entire hotel industry, or for that matter, all companies within a given sector. Thus, while each of the proposed factors needs to be considered in the evaluation decision making process, its relative importance will differ depending on the organisation carrying out the assessment. While this may seem frustrating to some, it acknowledges the realities of today's competitive world where companies are composed of various characteristics, resources and needs. As a result, any decisions regarding resource allocation and information technology can only be considered using the context of each individual company. For that reason, facilities are provided within the proposed model to assign weights to each of the factors to reflect their level of perceived importance in the evaluation decision. In the implemented model, a range of weights is suggested based on the findings of the two primary research

studies. However, as will be discussed, facilities are also provided to allow users to modify these weights so that the priorities of the organisation undertaking the evaluation can be incorporated.

Figure 6.1– Calculating the Adoption Suitability Score



6.3 Model Development

As was discussed above, a portfolio of the factors that should be considered when evaluating hotel electronic channels of distribution was developed, validated and prioritised using a combination of a Delphi study and an industry survey. The findings indicate that such evaluation decisions need to be multi-faceted and to

balance a variety of sometime contradictory issues, each with a different relative importance, against each other in order to arrive at an appropriate solution. For that reason, it was decided to create a computerised model as a decision support tool to help users of the model to combine, balance and interpret factors in an objective manner.

Given the limited time and resources available for the project, it was not thought feasible to develop a comprehensive model incorporating all of the factors identified. In any case, a large model would not act as a good illustration of the concept as it would be difficult to explain and illustrate to the reader. In addition, there are arguments in favour of only focusing on the most important evaluation factors. For example, Ittner and Larcker (2000) point out the danger of over analysis when developing a multi-dimensional evaluation model. While any model "is unlikely to capture fully the many dimensions of system performance, implementing an evaluation system with too many measures can lead to measurement disintegration – where an overabundance of measures dilute the effect of the measurement process. Managers chase a variety of measures simultaneously, while achieving little gains in the main drivers of success". For these reasons, a simplified model was developed, incorporating only the top ten evaluation factors in each scenario instead of the entire range identified. Thus the computerised model discussed below is in effect more limited than one that might actually be used in practice. However it is identical in terms of its conception and design, only differing substantially in terms of the number of factors included. Furthermore, its important to point out that the main purpose of this computerised model is not to generate a score to indicate in absolute terms whether a channel should or should not be used, but rather to serve as a guide for the

evaluation thought process. The model should help insure both that important factors are not overlooked, and also act as an objective aid to facilitating the evaluation process itself and the comparison of alternative channels. In fact it could be argued that there are no definitive answers to most of the questions posed – just subjective judgements. The model therefore acts as a decision support system – focusing on important issues, explaining the significance of each one, and allowing users to record their judgements (Davis and Olsen 1984). Conflicting factors are balanced by calculating a weighted score, and an overall suitability score is generated to help indicate the relative appropriateness of each channel being assessed.

Consideration was given to the use of an expert system for the development of the computerised model. An expert system generally implies a computer software system that assists in solving a defined problem using knowledge of a particular subject area or domain (Stockdale and Wood 1992). These systems can be used in two ways: either to completely fulfil a function that normally requires human expertise, or to play the role of an assistant to the human decision maker, as is the case in this situation. The decision makers may be expert in their own right, in which case the program may justify its existence by improving each decision maker's productivity. Alternatively the human collaborator may be someone who is capable of attaining expert levels of performance given the technical assistance from the program (Turban 1990). Once again, it is the latter situation that is relevant in this case, as the objective of the model development is to help hoteliers who are not expert in evaluating hotel electronic channels of distribution to successfully perform such assessments. Expert systems solve problems by heuristic or approximate methods, which, unlike algorithmic solutions, are not guaranteed to succeed. Such methods are approximate

in that they do not require perfect data and the solutions delivered by the system may be proposed with varying degrees of certainty (McCool 1987). The most fundamental difference between expert systems and conventional programs is that "expert systems manipulate knowledge while conventional programs manipulate data" (Waterman 1985). According to Buchanan and Duda (1983), there are three primary reasons for building expert systems:

1. *Replication of expertise* – to make expert knowledge available in the absence of the expert.
2. *Union of expertise* – to combine the expertise of several specialists into one knowledge base.
3. *Documentation* – recording of best knowledge for reuse and consistent application to problem solving.

All three arguments are clearly relevant in this case. Not only was the concept behind the computerised model that it should act as a decision support system and thus combine the knowledge of the subject experts consulted during the research study, but also that it should make this best practise available without the expert being present. Furthermore, while Buchanan & Duda concentrate on expertise, Waterman (1985) suggests focusing more on the nature of the problem itself when assessing the suitability of the use of expert systems. He claims that the factors considered important in determining the appropriateness of an expert system approach include:

1. *Nature of the problem* – the problem should have a symbolic structure, heuristics should be available for its solution and task decomposition is desirable.
2. *Complexity of the task* – it should not be too easy or too difficult for a human expert.
3. *Scope of the problem* – the problem should be of manageable size and practical.

With the computerised model, there is a desire to make the expert knowledge collected in the Delphi study and validated by the industry survey more widely available, the problem is appropriate for a human expert and is of a manageable size for development into an expert system. Thus based on both sets of criteria discussed above, the use of an expert system based approach would appear to be appropriate for the implementation of the hotel electronic distribution channel evaluation model. However, as Lynn & Murray (1996) point out, the most common problem with applying an expert system approach is doing so purely for the sake of using new technology in situations where conventional programming, spreadsheets or other readily available products are more appropriate solutions. The key argument for the use of an expert systems approach is whether the use of heuristics or rules of thumb is necessary. In this case, as the primary purposes of the model are to facilitate the decision making process and allow the comparison of subjective judgements - rather than to make the decision itself - the use of heuristics was not though essential to the successful development of the model. Thus it was felt that an appropriate model could be developed without the use of an expert system. An initial prototype was developed using the facilities of a computer spreadsheet supplemented by some

programming in Visual Basic. As development proceeded, such an approach was found to be appropriate and the final model was also developed in this manner. This was user tested with a small panel (academics and industry practitioners), and appropriate user interface changes were made based on their suggestions.

6.4 Model Description

Key features of the developed computerised model include:

- It highlights each of the evaluation factors that need to be considered in the electronic distribution channel evaluation process, and, using hyperlinks, explains the significance of each factor, thus acting as a decision support system for the user.
- It allows the integration of both the tangible and intangible criteria identified in the primary research in a manner that is both easily understood and easily used by industry practitioners.
- The use of weights allows the relative importance of each factor to be included in the evaluation. In the initial model presented to users, the weights are based on the importance scores assigned to each of the factors identified by both the Delphi panel and the industry survey. Users can choose to have either of these weights incorporated into the model, use an average of the two rankings or to enter their own weights so that their own priorities are incorporated.
- The model generates a suitability score for each channel. This is expressed in percentage terms to aid comprehension. A score of 50% represents indifference as to the use of the channel, with higher scores representing more favourable evaluations.

As the model opens, users are presented with a welcome screen (see Figure 6.2). This explains the purpose of the model, explains its development and gives instructions for its use. Users begin working with the model by choosing the weights to be used in calculating the suitability score (see Figure 6.3). Four options are presented (as was explained above): to use the importance scores generated by the Delphi study or the industry survey, an average of the two or to enter their own weights. Users are then presented with a range of questions that focus on each of the evaluation factors included in the model. Within each question, hyperlinks are provided that take the user to an explanation and discussion of the factor, provides technical definitions or, in the case of the cost issue, help to calculate the real cost of using the channel. Users then indicate their opinions on a semantic differential scale by positioning a slider at the relevant point to indicate their opinion on that factor (see Figure 6.4). Their response is then weighted using the previously chosen weights, and the suitability score calculated, as can be seen from Figure 6.5. This score represents an objective measure of the relative suitability of each distribution channel, given the priorities of the organisation considering the use of the channel and those of the person performing the evaluation. As such the results obtained are both organisational and person specific, and a poor relative score for a channel in an evaluation does not imply that the channel is ineffective. It is merely not appropriate for use by the company making the evaluation at that period of time.

Figure 6.2– The Model Welcome Screen

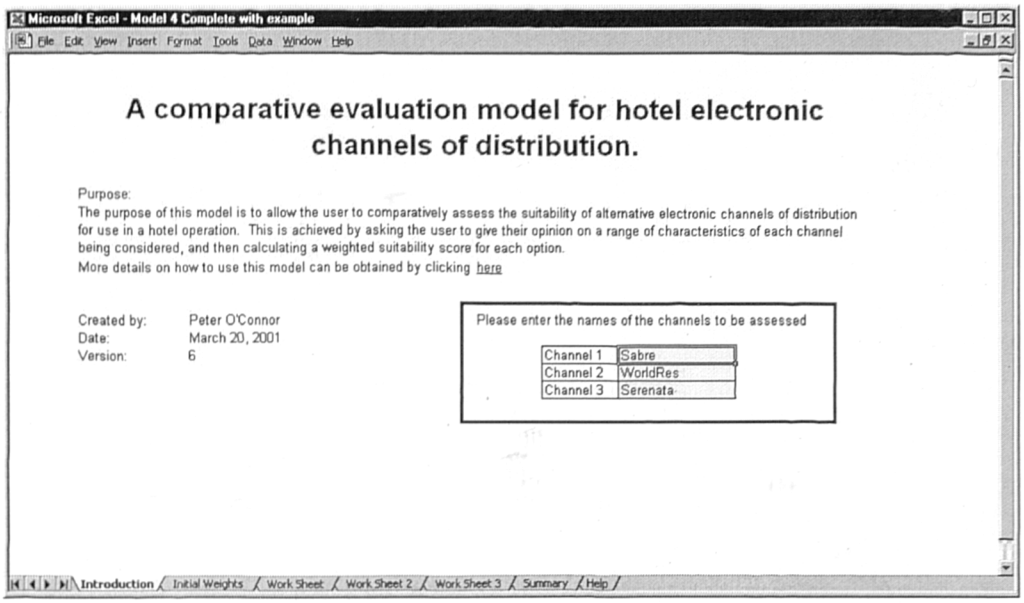
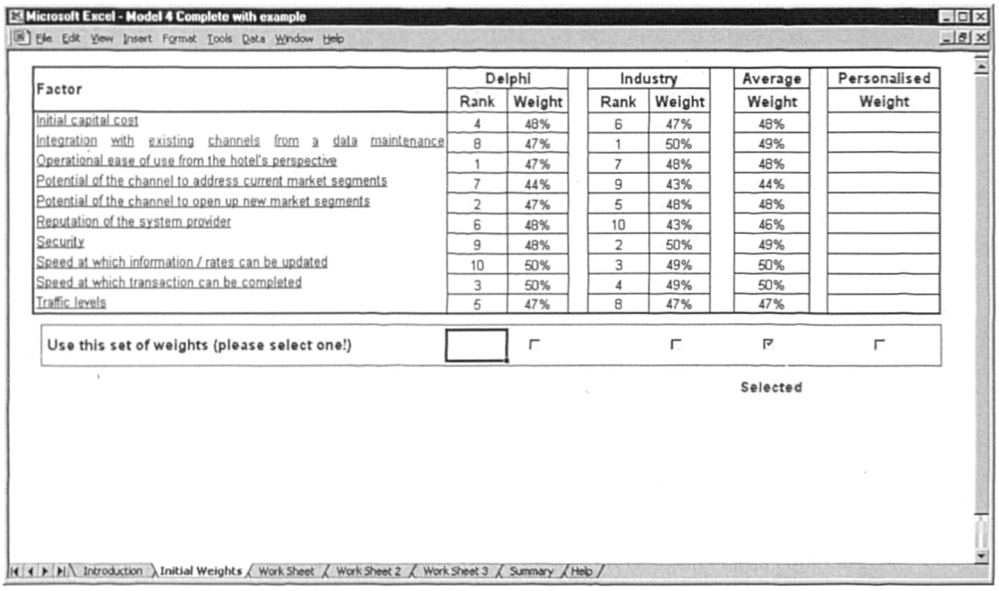


Figure 6.3 – The Initial Weights Screen of the Computerised Model



Factor	Delphi		Industry		Average	Personalised
	Rank	Weight	Rank	Weight	Weight	Weight
Initial capital cost	4	48%	6	47%	48%	
Integration with existing channels from a data maintenance	8	47%	1	50%	49%	
Operational ease of use from the hotel's perspective	1	47%	7	48%	48%	
Potential of the channel to address current market segments	7	44%	9	43%	44%	
Potential of the channel to open up new market segments	2	47%	5	48%	48%	
Reputation of the system provider	6	48%	10	43%	46%	
Security	9	48%	2	50%	49%	
Speed at which information / rates can be updated	10	50%	3	49%	50%	
Speed at which transaction can be completed	3	50%	4	49%	50%	
Traffic levels	5	47%	8	47%	47%	
Use this set of weights (please select one!)		☐		☐	☑	☐
					Selected	

Figure 6.4 – Assessing a Channel Using the Computerised Model

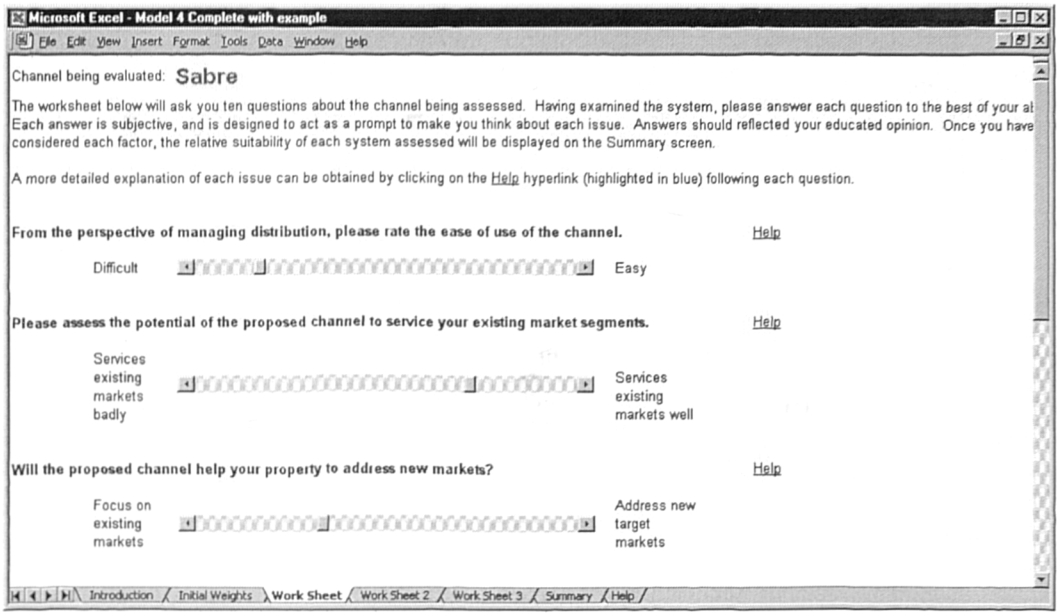
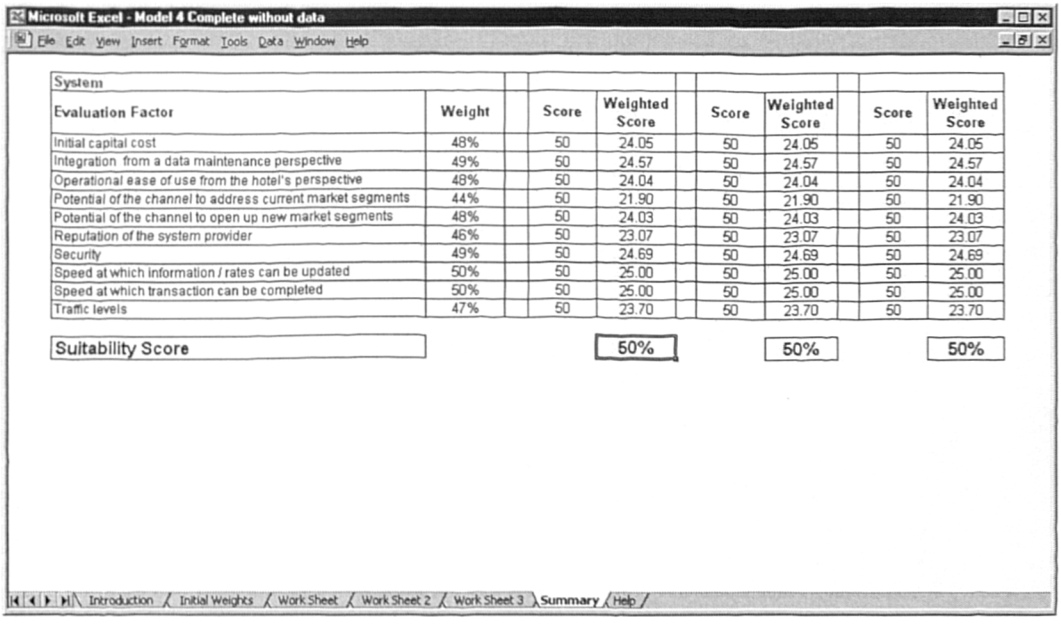


Figure 6.5 – The Channel Assessment Results Screen



System							
Evaluation Factor	Weight	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Initial capital cost	48%	50	24.05	50	24.05	50	24.05
Integration from a data maintenance perspective	49%	50	24.57	50	24.57	50	24.57
Operational ease of use from the hotel's perspective	48%	50	24.04	50	24.04	50	24.04
Potential of the channel to address current market segments	44%	50	21.90	50	21.90	50	21.90
Potential of the channel to open up new market segments	48%	50	24.03	50	24.03	50	24.03
Reputation of the system provider	46%	50	23.07	50	23.07	50	23.07
Security	49%	50	24.69	50	24.69	50	24.69
Speed at which information / rates can be updated	50%	50	25.00	50	25.00	50	25.00
Speed at which transaction can be completed	50%	50	25.00	50	25.00	50	25.00
Traffic levels	47%	50	23.70	50	23.70	50	23.70
Suitability Score			50%		50%		50%

6.7 Concluding Comments

This chapter draws to a close a multi-year research project that focused on developing a methodology to evaluate hotel electronic channels of distribution. In designing, conducting and analysing the study, considerable amounts of time and attention were devoted to methodological issues, as these are the foundations on which the credibility of the research stands. To this end, a combination of different research approaches were used and their findings triangulated to help assure the reliability of the research conclusions. The initial stage involved exploratory research, in the shape of a Delphi study. The data generated by this stage was analysed using content analysis and thus developed into a grounded theory conjecture as to how hotel electronic channels of distribution should be evaluated. These findings were cross validated by undertaking a survey of industry practitioners that assessed the acceptability and applicability of the factors in the evaluation decision-making process. Finally, the results of both primary research studies were combined to develop a computer based decision support system to act as an illustration of how such knowledge could be implemented as a practical tool for management. Overall the study reflects the combined opinions of both subject experts and industry practitioners and marries both qualitative and quantitative methodologies in order to ensure that it complied with scientific principles (Lubbe and Remenyi 1999).

The research findings demonstrate the multifaceted nature of distribution channel evaluation. Such evaluations are complex decision-making processes that require the integration of multiple key performance measures. Thus, in lieu of suggesting a definitive strategy or solutions as to how channels should be evaluated, the study has attempted to shape the reader's thinking with respect to the importance of the

problem, and bring to light the most important issues associated with the problem. Furthermore, a conceptual model that allows the comprehensive integration of the various tangible and intangible criteria identified in the primary research into the evaluation decision-making process has been designed and developed into a computerised decision support system. Lastly, the utility of this computerised system was demonstrated by applying it to an illustrative case problem. Thus the study has helped to document the present state of knowledge and industry practice regarding distribution channel evaluation, to provide a conceptual understanding of the evaluation process, to clarify many of the intangible factors associated with the evaluation process and proposed a model of how such evaluations should be carried out. It should be noted, however, that the findings represent the current views of respondents, and that as new media and technologies develop, the evaluation model may need to be extended.

As with all research projects, the study has generated as many questions as it has answered. There are a number of substantial areas suitable for further research, the most important of which are outlined below.

6.8 Suggestions For Further Research

During the course of this research project, a variety of supplementary and related research questions arose, which while interesting and valid topics in themselves, fell outside of the direct objectives of the study. While some of the topics cited below could be regarded as extensions of current work, each is worthy of investigation in its own right, and is clearly both topical and relevant given the demonstrated growing importance of hotel electronic distribution in today's competitive environment. A

description of some of the major research issues (in the order in which they were encountered in the research study), along with the main challenges foreseen, is presented below.

- The initial rounds of the Delphi study highlighted the issue of how the use of a particular electronic distribution channel affects the brand image of a property. The expert panel's responses revealed both the complexity and multi-faceted nature of this issue. Brand image refers both to quality of representation (in that poor use of the electronic medium can damage the hotel's image, while good use can enhance it), and also to the issue of control (in that a variety of Web intermediaries can and, in fact, often do now distribute the hotel's product, often without their expressed consent or knowledge. The brand image of the property is affected, as even though the customer is interacting with an intermediary, their perception is that they are interacting with the property itself). Brand association is a third facet. A property's image can be affected both by the range of channels in which it is included, and also by the image of the other properties distributed by each channel. Lastly, there is a growing body of thought that feels that it is the brand of the online channel, rather than that of the individual property, that has become important. Many online intermediaries are spending large sums on publicity and promotion to gain visibility, and thus in effect may be competing directly with the property's brand. Perhaps as a result of their youth, each of these issues is relatively unexplored. Little empirical research has been published to date on how the use of electronic channels affects brand in business in general and in the hotel sector in particular. However, given the demonstrated growing importance of electronic distribution in the hotel sector, it is clearly one that

deserves more dedicated and in-depth study to assess its implications for distribution strategy.

- The nomenclature and typology of hotel electronic channels of distribution described in Chapter Four of this study was purposely limited to Business-to-Consumer (B2C) channels (defined as those channels that did not package the hotel product as part of its sale to the end customer). While such channels are currently the most significant in terms of numbers of bookings generated, forecasts indicate that Business-to-Business (B2B) channels are likely to become more important in the future (Dombey 1998). Therefore there is a need to further develop both the nomenclature to incorporate the nodes that facilitate B2B distribution, and to expand the typology to include B2B routes to the marketplace. Such developments would present a broader and more complete picture of the hotel electronic distribution arena. A similar methodology to the one used in this study could be applied, with a panel of experts suggesting the range of routes available in an iterative process, and the list generated being validated by an industry panel. Following on from this, the question arises as to whether the evaluation of such channels is the same? While common sense would suggest that the process is similar if not identical, such a theory needs to be tested so that a model that works for all hotel electronic distribution channels can be developed.

- As part of the Delphi study, a comprehensive typology of the most important electronic channels of distribution currently available to hotels was developed. This was subsequently validated by the industry survey, and represents a good starting point for understanding the range of channels currently available and their

interdependence. This typology has been developed using general terminology for each node on the distribution chain, i.e. using names such as "CRS" and "Switch Company" rather than specific examples of actual systems. The opportunity exists to considerably develop the typology by, in effect, "filling in the boxes" – identifying the range of systems that can act as facilitators of the distribution process at each level. Following on from this, the key characteristics of each system – as identified by the evaluation factors – could be incorporated into the evaluation model. In effect this would develop a guide or roadmap that would allow industry practitioners to carry out evaluations without personally knowing the characteristics of each system. Such a facility would have great utility, as practitioners could in effect look up a potential channel and immediately see the implications of adopting it for their organisation. However, as was discussed in Chapter Two, the main difficulty with implementing such a concept is the fast pace of change in the hotel electronic distribution arena. Existing systems are in a state of rapid evolution, and thus the accuracy of such a model would be difficult to maintain without significant ongoing redevelopment on a regular basis.

- There is some anecdotal evidence (e.g. (Gray, Matear et al. 2000)) that use of the Web for distribution seems to be moderately related to business performance in hospitality firms. Related to this, it would be interesting to establish if there was a relationship between the use of each of the channels identified and business performance. However such an approach is fraught with difficulties. As was discussed in Chapter Two, the number of channels, and combinations of channels is rapidly growing as a result of virtual alliances between systems and new players

entering the arena. Therefore the number of potential permutations of channels that could be used by companies is also expanding rapidly, making the identification of any degree of association difficult. Furthermore there is the question of how to measure success. As was also discussed in Chapter Two, identifying the benefits of using a particular distribution channel is difficult, due in part to the "look to book" issue and furthermore to the difficulty in associating reservations with routes rather than systems. An alternative approach would be to use a more general measure of success, such as for example share price, but such a strategy would suffer from the difficulty in isolating the effect of the many external factors that also affect the company's external valuation.

- Having developed a mathematical model for the evaluation of supply chain management, Talluri (2000) suggests testing its efficacy by applying it to a case problem. A similar strategy could be employed as a continuation of this study. As an illustration of how the model could potentially be used, the manager responsible for electronic distribution in one property of a large hotel group was emailed the computerised version of the model described in Chapter Six and asked to use it to evaluate the adoption of three alternative channels. The tester was not briefed in any way, but was simply sent the model and asked to perform the evaluation. Following completion of the analysis, he was asked to explain his answers, and to comment on the usefulness of the computerised model. A description of the property, the results of the analysis and a discussion of his explanation is presented in Appendix 4. Both the evaluation and the discussion that follows it illustrate the appropriateness and acceptability of the model for use in this evaluation process.

- As was suggested above, it would also be interesting to relate the use of the evaluation methodology developed as part of this study to some measure of success. Ittner et al (2000) point out that lack of causal links is a major limitation of non financial evaluation techniques, and that while many companies adopt such measures without articulating or verifying their relationship with accounting profit or stock price, this leads to two problems when evaluating performance; incorrect measures that focus attention on the wrong objectives; and difficulties in evaluating their relative importance. Without knowing the size and timing of associations among measures, companies find it difficult to make decisions or measure success based on them. Similar criticism is also valid in this study, as while the evaluation model has been empirically developed and validated, its use has not been extensively tested and thus the validity of the evaluation factors in real life is not known. A possible strategy would be to undertake a longitudinal study of companies using the model to assist in their evaluation decisions and to subsequently use multiple regression techniques to determine both the list of valid factors and their effect (individual and combined) on the company's profits or share price. In the past, a variety of researchers (see, for example, Brynjolfsson and Hitt (1996), Hitte (1996) or Mahmood and Mann (1993)) have attempted to establish such a causal relationship, but have had little success. As was pointed out above, testing such a relationship is difficult due to the problems with measuring success, the difficulties in isolating and controlling external factors, and the challenge of ensuring company participation. While clearly a complex research area, such a study would have utility and would contribute greatly to the body of knowledge in distribution channel evaluation

- As was mentioned earlier, Talluri (2000), while illustrating the use of his mathematical model for supply chain evaluation, suggests that the efficacy of his model be tested by applying it empirically to case problems. Such an approach would also have utility in this study. In Appendix Five, the use of the computer based decision support system was illustrated by demonstrating its ability to comparatively evaluate the potential of three proposed channels for a particular hotel. However, as was pointed out above, this example was not included to empirically test the model, but to illustrate how such a model might be used in practice. A more rigorous evaluation of the applicability of the model could be carried out by obtaining the cooperation of various hotel companies and encouraging them to both use the model as an aid to their channel adoption / assessment decisions, and to subsequently measure the success / failure of the recommendations. Clearly a longitudinal case study approach would be useful to help identify if the use of the model helped increased the efficiency of the companies using it.

- Lastly, the evaluation model described in this study has been developed from the perspective of the chain hotelier. Although, as was discussed in Chapter One, hotel chains control a significant proportion of total bedroom stock and generate the majority of profits, they are not representative of the industry as a whole. Independent properties form the majority of hotels in terms of properties and revenue, and, as was discussed in Chapter Three, have very different characteristics to the hotel chains in terms of both their management and their use of electronic distribution. Further research could establish if the range of channels

included in the typology described in Chapter Four is appropriate for independent properties and how the relative importance of these channels differs in terms of contribution to volume of business. Similarly, the range of evaluation factors was developed specifically to assess the suitability of channels for use by chain hotels. Additional empirical research is necessary to establish if the same set of criteria are valid for use by non-chain properties.

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Appendices

Appendix 1

Delphi Participants who completed at least two rounds of the study

Participant	Organisation	Category
Alyson Dombey	Partners in Marketing	Consultant
Anna Pollock	The Pembridge Group	Consultant
Arno Ebner	TISCover	System Supplier
Birgit Proll	FAW-University	Academic
Carl Marcussen	Research Centre of Bornholm	Researcher
Dimitrios Buhalis	University of Westminster	Academic
Donal Bender	Bender Associates	Consultant
Elaine Crichton	Napier University	Academic
Eric Christensen	WorldRes.com	System Supplier
Gert van der Pijl	Tilburg University	Academic
Graeme Evans	University of North London	Academic
Hannes Werthner	University of Vienna	Academic
Hilary Main	Swansee Business School	Academic
Ingvar Tjostheim	Norwegian Computing Centre	Researcher
John Cahill	Manhattan East Suite Hotels	Industry Practitioner
Jules Sieburgh	Priceline.com	System Supplier
Karl Wober	Vienna University of Economics	Academic
Karsten Karcher	Imminus / Telewest	System Supplier
Mark Hamilton	Conrad N. Hilton College	Academic
Martin Peacock	University of North London	Academic
Michael Baker	Orchard Consulting	Consultant
Peter Dennis	Time Communications Group	Industry Practitioner
Roger Carter	TEAM	Consultant
Scott Anderson	CENDANT Corporation	Industry Practitioner
Scott Heintzeman	Carlson Hospitality Corporation	Industry Practitioner
Silvia Sussmann	University of Surrey	Academic
Thomas Steinberg	Allied Hospitality Group	Industry Practitioner
Thomas Steiner	University of Lausanne	Academic
Walter Schertler	Trier University	Academic
Michelle Woodley	Swissotel	Industry Practitioner

Appendix 2

Delphi Questionnaires 1, 2 and 3

Delphi Study
Evaluating Hotel Electronic Channels of Distribution
Round One

Peter O'Connor
Institute de Management Hotelier International (Cornell – ESSEC)

Background
Please let me take a minute to familiarise you with the process that we will follow over the coming weeks. Our Delphi panel is composed of 45 participants, all of whom have been selected based on their knowledge of the hospitality and tourism electronic distribution arena. By design, the panel members will remain anonymous until the completion of the Delphi study to help prevent the opinion of any one member having an undue influence on the responses of the others.

A series of three questionnaires will be distributed over the coming week. The first is attached, and is composed of relatively open questions as its objective is begin a general exploration of the area being researched. Please respond to each question in long hand, and feel free to explain you opinion in as much detail as you wish. Once participants have returned their responses, I will analyse and summarise their answers. A brief report on these findings will then be distributed, followed by a second questionnaire. The latter is more detailed and is designed to reach an understanding of how the group as a whole view the major issues in evaluating electronic distribution channels for hotels. A third and final iteration of the process will then follow to help consolidate the consensus.

Instructions
Please answer each of the following questions. At this stage, each question is designed to be open in nature, as the aim is to identify the key issues involved in the evaluation of electronic distribution channels for hotels. Feel free to give explanations in your answer as to why you feel that particular issues are important. Please return the document either by email to oconnor@essec.fr or by fax to +33 1 3443 1701. All responses will be kept in the strictest confidence and thank you in advance for your assistance.

Definition

> "Electronic distribution systems are those which use electronic media to provide relevant information to the customer to allow a purchase decision, and subsequently allow the transaction to be completed by facilitating the ordering and purchase of the product".

Questions
1. Please comment on the above definition. Explain how you feel that it could be improved as it applies to the hotel product.

2. Please list examples of the electronic distribution channels that you understand to be are available for use by hotels today.

3. Describe the factors that you feel that a hotel company should take into account **when deciding whether to use** a particular electronic channel of distribution.

4. Describe the factors that you feel that a hotel company should take into account when evaluating **the continued use** of a particular electronic channel of distribution.

Delphi Study
Evaluating Hotel Electronic Channels of Distribution
Round Two

Peter O'Connor
Institute de Management Hotelier International (Cornell – ESSEC)

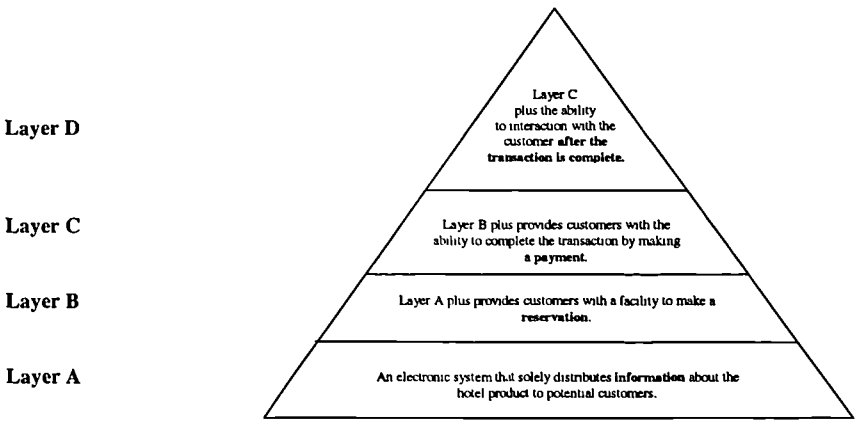
Instructions
A synthesis of the results of the first round of the Delphi study has been prepared and is attached as a separate document to this email. You should read the summary first, before starting to complete this questionnaire. Then please answer the following questions using the spaces provided, using an "X" to answer tick box questions and typing the responses to the open questions. Please return the document either as an email attachment to oconnor@essec.fr or by fax to +33 1 3443 1701. All responses will be kept in the strictest confidence and thank you in advance for your assistance.

Respondent Self-rating
Please rank yourself in terms of your expertise in the field of **hotel electronic distribution** using the following scale:

1 **Unfamiliar** with the topic.
2 **Casually acquainted** if you have read or heard about the topic in the media or other popular presentations.
3 **Familiar** with the topic if you are familiar with issues about the topic, have read about it and formed some opinions about it.
4 **Knowledgeable** if you were once an expert but feel somewhat rusty now, or are in the process of becoming an expert but still have some way to go to achieve mastery of the topic, or if you work in a neighbouring field and occasionally draw upon or contribute to the development of the topic.
5 **Expert** if you consider yourself to belong to he community of people who currently dedicate themselves to the topic matter, and are recognised outside of your organisation as having a strong grasp of trends or other aspects of the topic.

Your ranking of yourself: _____

Question 1
As was outlined in the summary document, there appear to be a variety of opinions as to where exactly electronic distribution stops and where it merges into e-business. Based on an analysis of the responses, a "*layered*" approach is proposed, which is outlined in the diagram below. Each layer presumes that the lower layers are included, so you cannot, for example, have payment (layer C) without reservation (layer B).



Specifically in relation to the **hotel product**, please indicate whether you feel each layer should be considered as being part of an electronic distribution system.

	Is **NOT** part of an Electronic Distribution system	**IS** part of an Electronic Distribution system	**Goes beyond** the requirements for an Electronic Distribution system
Layer D	[ ]	[ ]	[ ]
Layer C	[ ]	[ ]	[ ]
Layer B	[ ]	[ ]	[ ]
Layer A	[ ]	[ ]	[ ]

Do you feel that any layers have been missed out of the analysis? Yes [ ] No [ ]
If "Yes", please explain your reasoning.

Do you feel that any of the layers identified above are redundant? Yes [ ] No [ ]
If "Yes", please explain your reasoning.

Question 2

The first round of the study identified a lack of standardisation in relation to the terminology used to describe hotel electronic distribution. As one of the objectives of the Delphi is to identify the panel's viewpoint as to the relative importance of each channel, some sort of common vocabulary is necessary. However, its also clear that trying to describe electronic channels of distribution using traditional terminology such as CRS or GDS is problematic as a result of the growing number of inter-relationships between the channels. A more appropriate way to describe them may be to describe the route taken by the data from the hotel to the customer. Based on the responses to the first round, an attempt has been made to develop a comprehensive list of such routes. . Definitions and examples of each of the terms used are presented at the end of this questionnaire. **Channels that incorporate the hotel product into a package have been deliberately excluded.**

Please examine the list and answer the questions below

- *Hotel* to *CRS* to *GDS* to *Travel Agent* to *Customer*
- *Hotel* to *CRS* to *Switch* to *GDS* to *Travel Agent* to *Customer*
- *Hotel* to *CRS* to *Customer*
- *Hotel* to *CRS* to *Hotel Company web-site* to *Customer*
- *Hotel* to *CRS* to *Switch web-site* to *Customer*
- *Hotel* to *CRS* to *GDS* to *GDS web-site* to *Customer*
- *Hotel* to *CRS* to *Switch web-site* to *GDS web-site* to *Customer*
- *Hotel* to *CRS* to *Switch web-site* to *Travel Agent* to *Customer*
- *Hotel* to *Rep Company* to *GDS* to *Travel Agent* to *Customer*
- *Hotel* to *Rep Company* to *Customer*
- *Hotel* to *Rep Company* to *Rep Company web-site* to *Customer*
- *Hotel* to *DMS* to *TIC* to *Customer*
- *Hotel* to *DMS* to *Customer*
- *Hotel* to *DMS* to *Destination web-site* to *Customer*
- *Hotel* to *individual hotel web-site* to *Customer*
- *Hotel* to *Web intermediary* to *Customer*

Do you feel that any routes have been missed out of the analysis? Yes [ ] No [ ]
If "Yes", please explain your reasoning.

Do you feel that any of the routes identified above are redundant? Yes [ ] No [ ]
If "Yes", please explain your reasoning.

Question 3
In the attached document, the factors that should be taken into account when evaluating hotel electronic channels of distribution identified in the first round of the study were summarised and discussed. Those that appeared consistently are presented below in alphabetical order. In each case, please indicate how important you feel each factor to be when evaluating a hotel electronic channel of distribution using a scale from "1" being that it can be safely ignored to "5" being that it must be taken into consideration:

1 2 3 4 5
Ignore ← to → **Essential**

	When channel is **first being considered** (1 to 5)	When **ongoing use** of the channel is being considered (1 to 5)
Ability to individually recognise customers	[ ]	[ ]
Achieved revenue from channel	[ ]	[ ]
Achieved volume of transactions	[ ]	[ ]
Availability of alternative electronic channels	[ ]	[ ]
Capability to provide management information	[ ]	[ ]
Effect of using channel on brand image	[ ]	[ ]
Effect on existing channel's of distribution	[ ]	[ ]
Effect on existing customer relationships	[ ]	[ ]
Effect on room rate	[ ]	[ ]
Forecast revenue from channel	[ ]	[ ]
Forecast volume of transactions	[ ]	[ ]
Independence of the provider of the channel	[ ]	[ ]
Initial capital cost	[ ]	[ ]
Integration with existing electronic channels from a data maintenance perspective	[ ]	[ ]
Joining or introduction fee	[ ]	[ ]
Operational ease of use from the hotel's perspective	[ ]	[ ]
Potential of channel to address current market segments	[ ]	[ ]
Potential of channel to open up new market segments	[ ]	[ ]
Presence of competitors in the channel under consideration	[ ]	[ ]
Reputation of the provider of the channel	[ ]	[ ]
Security of the channel	[ ]	[ ]
Speed at which information and rates can be updated	[ ]	[ ]
Speed at which transaction can be completed	[ ]	[ ]
Traffic levels (number of visitors, lookers, hits)	[ ]	[ ]
Transaction cost	[ ]	[ ]

Are there other factors that you strongly feel have been omitted from the list? Yes [ ] No [ ]
If "Yes", please explain your reasoning.

Are any of the factors redundant? Yes [ ] No [ ]
If "Yes", please explain your reasoning.

Question 4
Apart from the obvious change from "potential" to "achieved" results, do you feel a distinction should be made between the factors that need to be taken into account when first considering an electronic channel of distribution and those that need to be considered when assessing its continued use?

Yes [ ] No [ ]

If "Yes", please explain your reasoning.

Question 5
The issue of cost was one of the most frequently cited evaluation criteria identified in the first round of the Delphi. Please explain **in detail** your understanding of the costs involved in using an electronic channel of distribution.

Question 6
The effect on "brand image" of using a particular channel was also frequently cited. Please explain your understanding of how using a particular electronic channel of distribution can affect the brand image of a hotel.

Question 7
Please use this space to add your comments and suggestions on the attached summary document.

Definitions

CRS	Central Reservations Systems operated by hotel chains to process information requests and reservations on behalf of the group as a whole. Examples include Marriott International's MARSHA or Holiday Inn's Holidex systems.
Customer	The consumer of the hotel product.
Destination web-site	Web sites that use a DMS database as their operations engine. Examples include www.ireland.travel.ie and www.tiscover.com.
DMS	Destination Management System – systems that consolidate and distribute a comprehensive range of tourism products for a specific region, usually with public sector involvement. Examples include Gulliver in Ireland and Ossian in Scotland.
GDS web-site	Web site operated by the GDS using the GDS as its operations engine. Examples include www.expedia.com and www.travelocity.com.
GDS	Global Distribution System – systems that have their origins in the airline reservation systems and that primarily address the travel agent. Examples include Sabre, Amadeus, WorldSpan, and Galileo.
Hotel company web-site	Web site operated by a hotel company providing distribution for the entire group using the CRS as its operations engine. Examples include www.hilton.com and www.accor.com
Individual hotel web-sites	Web sites operated by individual hotels that distribute directly to the customer.
Rep company web-site	Web site operated by a Rep company using its own database as its operations engine. An example is Utell's www.hotelbook.com
Rep Company	Third party company providing distribution services to the hotel in return for a fee. Examples include Best Western and Utell.
Switch web-site	Web site operated by the Switch company using the Switch as its operations engine. An example is www.travelweb.com.
Switch	A system that acts as a bi-directional interface between a CRS and the major GDS. Examples include THISCo and Wizcom.
Travel Agent	An organisation that acts as an advisor and booker on behalf of customers seeking travel products. Examples vary from large international chains such as American Express Travel and Rosenbuth International to small independent operations.
Web intermediary	Web based company that assists in distributing the hotel product. Examples include www.worldres.com and www.all-hotels.com.

Delphi Study
Evaluating Hotel Electronic Channels of Distribution
Round Three

Peter O'Connor
Institute de Management Hotelier International (Cornell – ESSEC)

Instructions
A synthesis of the results of the second round of the Delphi study has been prepared and is attached as a separate document to this email. You should read the summary first, before starting to complete this questionnaire. Then please answer the following questions using the spaces provided by typing your responses.

Please return the document either as an email attachment to oconnor@essec.fr or by fax to +33 1 3443 1701. All responses will be kept in the strictest confidence and thank you in advance for your assistance.

Question 3.1 – A Voting Exercise!
In the previous round, the factors identified by the panel to be taken into account when hotel electronic channels of distribution **are first being considered** were presented. These were ranked in importance on a scale of 1 (Unimportant) to 5 (Important), and the full results of this exercise were presented in the attached summary document.

The list of factors identified is presented again below, along with the panel's average score from the ranking. Higher scores indicate that the panel as a whole perceives a particular factor to be more important. Which of the factors do you consider to be **most** important when evaluating the **adoption of hotel electronic channels of distribution**? Using a total of twenty votes, place an "X" next to those factors that you consider to be most important. You can give as many votes as you wish to each factor. Therefore if you consider a particular factor to be important, you can give it two, three or even more votes. You may also taking the overall panels' viewpoint into consideration, or can ignore it depending on your personal opinion.

Channel **"Adoption"** Factors	Average Score	Vote(s)
Ability to individually recognise customers	3.29	
Availability of alternative electronic channels	3.25	
Capability to provide management information	3.54	
Effect of using channel on brand image	3.75	
Effect on existing channel's of distribution	3.46	
Effect on existing customer relationships	3.92	
Effect on room rate	3.42	
Forecast revenue from channel	2.96	
Forecast volume of transactions	2.57	
Independence of the provider of the channel	2.96	
Initial capital cost	4.08	
Integration with existing electronic channels from a data maintenance perspective	4.00	
Joining or introduction fee	3.57	
Operational ease of use from the hotel's perspective	4.00	
Potential of channel to address current market segments	3.70	
Potential of channel to open up new market segments	3.96	
Presence of competitors in the channel under consideration	3.57	
Reputation of the provider of the channel	4.09	
Security of the channel	4.08	
Speed at which information and rates can be updated	4.17	
Speed at which transaction can be completed	4.22	
Traffic levels (number of visitors, lookers, hits)	4.00	
Transaction cost	3.74	

Question 3.2 – Another Voting Exercise!
The factors identified by the panel when considering the **continued use of** a hotel electronic channel of distribution were also presented and ranked as in question 3.1. Once again, using a total of twenty votes, place an "X" next to those factors that you consider to be the most important. As in the last question, you can give as many votes as you wish to each factor, so if you consider a particular factor to be important, you can give it multiple votes. Similarly, you can either consider or ignore the opinion of the panel as a whole.

Channel **"Continued Use"** Factors	Mean Score	Votes
Ability to individually recognise customers	4.38	
Achieved revenue from channel	4.04	
Achieved volume of transactions	4.09	
Availability of alternative electronic channels	3.17	
Capability to provide management information	4.12	
Effect of using channel on brand image	3.87	
Effect on existing channel's of distribution	3.54	
Effect on existing customer relationships	4.08	
Effect on room rate	3.63	
Forecast revenue from channel	3.54	
Forecast volume of transactions	3.61	
Independence of the provider of the channel	3.08	
Initial capital cost	2.92	
Integration with existing electronic channels from a data maintenance perspective	4.08	
Joining or introduction fee	2.87	
Operational ease of use from the hotel's perspective	4.26	
Potential of channel to address current market segments	4.13	
Potential of channel to open up new market segments	4.30	
Presence of competitors in the channel under consideration	3.57	
Reputation of the provider of the channel	3.78	
Security of the channel	4.13	
Speed at which information and rates can be updated	4.52	
Speed at which transaction can be completed	4.43	
Traffic levels (number of visitors, lookers, hits)	4.17	
Transaction cost	4.26	

Question 3.3 – the future of hotel electronic distribution.
One of the objectives of the Delphi study was to develop a typology of the various business-to-customer channels of electronic distribution currently available to hotels. This was initiated in the first round and refined in round two. A representation of the channels identified is offered in diagrammatic form on the second last page of this questionnaire, along with a glossary explaining of the definition of each system. Its clear that the electronic distribution arena is rapidly evolving, with new channels appearing and others disappearing on practically a daily basis.

(a) Which of the following channels do you feel **currently** have the greatest effect on the volume of business of **chain hotels**? Please follow the same process as with question 3.1 - using a total of twenty votes, place an "X" next to those factors that you consider to be most important. You can give as many votes as you wish to each channel, so if you consider a certain channel to be particularly important, you can give it two, or even more votes.

Route	Votes
Hotel to CRS to GDS to Travel Agent to Customer	
Hotel to CRS to Switch to GDS to Travel Agent to Customer	
Hotel to CRS to Customer	
Hotel to CRS to Hotel Company web-site to Customer	
Hotel to CRS to Switch web site to Customer	
Hotel to CRS to GDS to GDS web-site to Customer	
Hotel to CRS to Switch web-site to GDS web-site to Customer	
Hotel to CRS to Switch web-site to Travel Agent to Customer	
Hotel to CRS to Switch to GDS to GDS web-site to Customer	
Hotel to CRS to Switch to GDS to GDS web-site to Travel Agent to Customer	
Hotel to CRS to Switch to GDS to Web intermediary to Customer	
Hotel to CRS to DMS to Customer	
Hotel to CRS to DMS to Destination web-site to Customer	
Hotel to CRS to DMS to TIC to Customer	
Hotel to Rep Company to GDS to Travel Agent to Customer	
Hotel to Rep Company to Customer	
Hotel to Rep Company to Rep Company web-site to Customer	
Hotel to Rep Company to GDS to GDS web-site to Customer	
Hotel to Rep Company to GDS to Web intermediary to Customer	
Hotel to Rep Company to GDS to Web intermediary to GDS web-site to Travel Agent to Customer	
Hotel to DMS to TIC to Customer	
Hotel to DMS to Customer	
Hotel to DMS to Destination web-site to Customer	
Hotel to DMS to Web intermediary to Customer	
Hotel to individual hotel web-site to Customer	
Hotel to individual hotel web-site to Travel Agent to Customer	
Hotel to individual hotel web-site to TIC to Customer	
Hotel to Web intermediary to GDS to Travel Agent to Customer	
Hotel to Web intermediary to Customer	
Hotel to GDS to Travel Agent to Customer	

(b) Are there any electronic routes not included in the model that you feel will have a significant effect on hotel distribution **over the next year**?

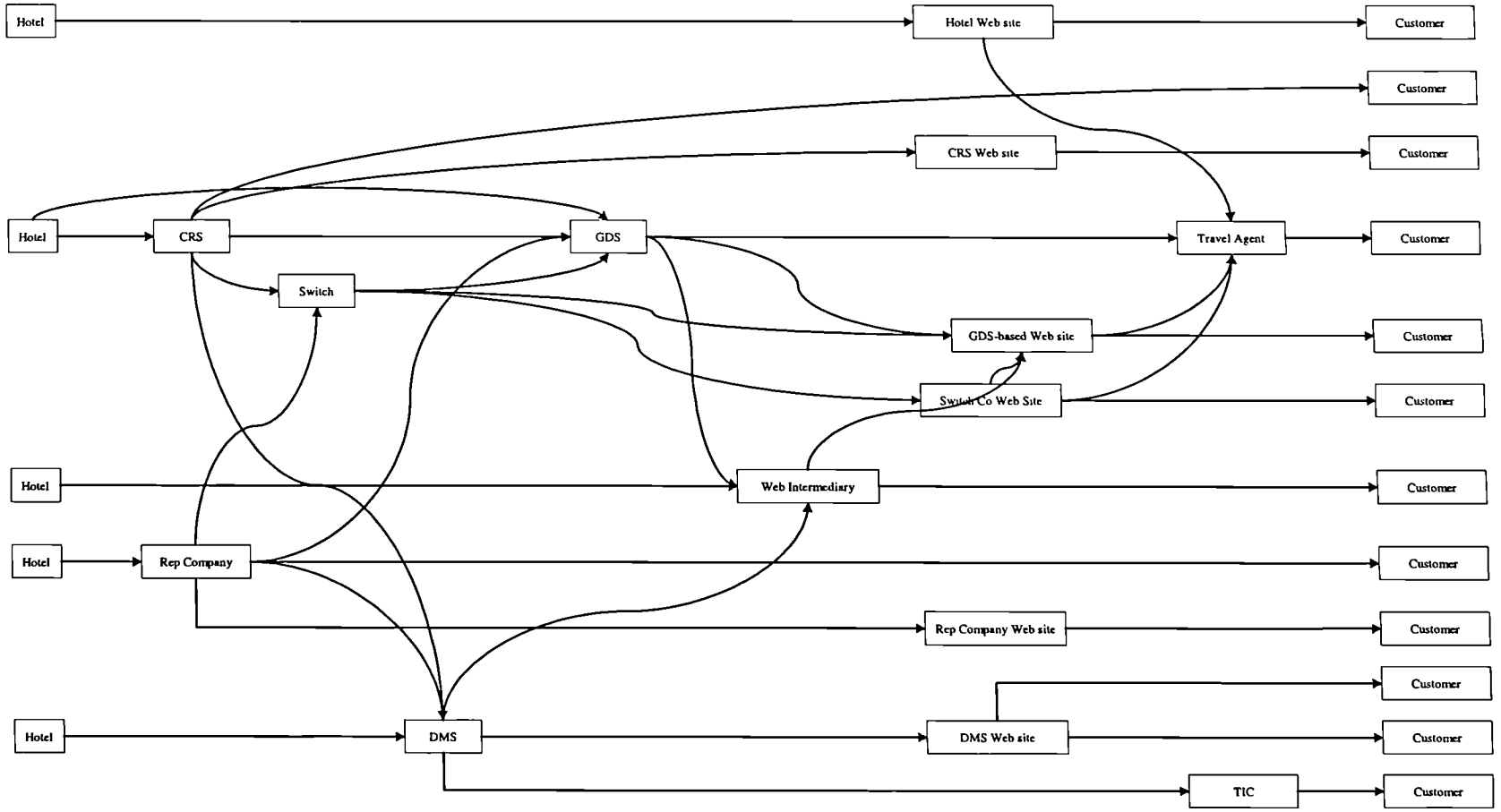
_____

_____

(c) In your opinion, what will happen to each of these channels over the next year in terms of its importance?

Route	Greatly decline	Decline	Remain the same	Grow	Greatly grow
Hotel to CRS to GDS to Travel Agent to Customer					
Hotel to CRS to Switch to GDS to Travel Agent to Customer					
Hotel to CRS to Customer					
Hotel to CRS to Hotel Company web-site to Customer					
Hotel to CRS to Switch web-site to Customer					
Hotel to CRS to GDS to GDS web-site to Customer					
Hotel to CRS to Switch web-site to GDS web-site to Customer					
Hotel to CRS to Switch web-site to Travel Agent to Customer					
Hotel to CRS to Switch to GDS to GDS web-site to Customer					
Hotel to CRS to Switch to GDS to GDS web-site to Travel Agent to Customer					
Hotel to CRS to Switch to GDS to Web intermediary to Customer					
Hotel to CRS to DMS to Customer					
Hotel to CRS to DMS to Destination web-site to Customer					
Hotel to CRS to DMS to TIC to Customer					
Hotel to Rep Company to GDS to Travel Agent to Customer					
Hotel to Rep Company to Customer					
Hotel to Rep Company to Rep Company web-site to Customer					
Hotel to Rep Company to GDS to GDS web-site to Customer					
Hotel to Rep Company to GDS to Web intermediary to Customer					
Hotel to Rep Company to GDS to Web intermediary to GDS web-site to Travel Agent to Customer					
Hotel to DMS to TIC to Customer					
Hotel to DMS to Customer					
Hotel to DMS to Destination web-site to Customer					
Hotel to DMS to Web intermediary to Customer					
Hotel to individual hotel web-site to Customer					
Hotel to individual hotel web-site to Travel Agent to Customer					
Hotel to individual hotel web-site to TIC to Customer					
Hotel to Web intermediary to GDS to Travel Agent to Customer					
Hotel to Web intermediary to Customer					
Hotel to GDS to Travel Agent to Customer					

Figure 1 – A typology of hotel electronic distribution channels



Glossary

CRS	Central Reservations Systems operated by hotel chains to process information requests and reservations on behalf of the group as a whole. Examples include Marriott International's MARSHA or Holiday Inn's Holidex systems.
Customer	The consumer of the hotel product.
Destination web-site	Web sites that use a DMS database as their operations engine. Examples include www.ireland.travel.ie and www.tiscover.com.
DMS	Destination Management System – systems that consolidate and distribute a comprehensive range of tourism products for a specific region, usually with public sector involvement. Examples include Gulliver in Ireland and Ossian in Scotland.
GDS web-site	Web site operated by the GDS using the GDS as its operations engine. Examples include www.expedia.com and www.travelocity.com.
GDS	Global Distribution System – systems that have their origins in the airline reservation systems and that primarily address the travel agent. Examples include Sabre, Amadeus, WorldSpan, and Galileo.
Hotel company web-site	Web site operated by a hotel company providing distribution for the entire group using the CRS as its operations engine. Examples include www.hilton.com and www.accor.com
Individual hotel web-sites	Web sites operated by individual hotels that distribute directly to the customer.
Rep company web-site	Web site operated by a Rep company using its own database as its operations engine. An example is Utell's www.hotelbook.com
Rep Company	Third party company providing distribution services to the hotel in return for a fee. Examples include Best Western and Utell.
Switch web-site	Web site operated by the Switch company using the Switch as its operations engine. An example is www.travelweb.com.
Switch	A system that acts as a bi-directional interface between a CRS and the major GDS. Examples include THISCo and Wizcom.
Travel Agent	An organisation that acts as an advisor and booker on behalf of customers seeking travel products. Examples vary from large international chains such as American Express Travel and Rosenbuth International to small independent operations.
Web intermediary	Web based company that assists in distributing the hotel product. Examples include www.worldres.com and www.all-hotels.com.

Appendix 3

Paper representation of industry questionnaire

Evaluating Hotel Electronic Channels of Distribution

Peter O'Connor
Institute de Management Hotelier International (Cornell – ESSEC)

Background
This questionnaire is part of a larger study examining the current state of hotel electronic distribution, and specifically focusing on how the use of such channels should be assessed. Research has already been carried out with a smaller panel to establish the major channels currently available for hotels to distribute their product electronically, as well as to identify factors that should be taken into consideration when evaluating such channels. This final stage of the study involves surveying the electronic distribution managers of the top 200 hotel brands worldwide to establish the view of industry practitioners and to establish a picture of actual practice in this rapidly changing arena. Your help would be greatly appreciated.

Instructions

Please complete the questionnaire shown below. All answers provided will be kept in the strictest confidence and will only be published in aggregate form. A glossary is provided at the end of the document to allow you to clarify the meaning of any technical terms. When you are happy with your answers, please click on the "submit" button and your response will be automatically sent to the server. (Note – you must be online – that is connected to the Internet - when you click on submit for your answers to be successfully communicated. The questionnaire can be completed offline if you wish – its only while the submit button is being clicked that you must be connected).

If you would like to receive a summary of the results, please provide your email address in the designated space provided at the end of the questionnaire. A copy of the summary document will be sent to you approximately two weeks after completion of the survey.

1. Relative Importance of Hotel Electronic Distribution Channels

In the initial set of questions, hotel electronic channels of distribution are described by naming the "nodes" through which information and transactions flow while travelling between the hotel and the customer. For example, what we commonly refer to as "Global Distribution Systems" are in fact several different channels, depending on how the customer interacts with them. For example, one channel is "Hotel to CRS to GDS to Travel Agent to Customer", which in effect means that information and transactions pass through the hotel company's central reservations system, one of the Global Distribution Systems and a travel agency on the route between the hotel and the customer. This is in effect different to, for example, "Hotel to CRS to GDS to GDS web-site to Customer", where a Website allowing the customer to interact directly with the GDS

system replaces the travel agent. A definition of what is commonly understood by each of the system is included in the glossary at the end of this document.

a) Which of the following channels do you feel **currently** has the greatest effect on the volume of business of **chain hotels in general**? Using a total of twenty votes, indicate which channels you consider to be most important. You can give as many votes as you wish to each channel. Therefore if you consider a particular factor to be important, you can give it two, three or even more votes.

Route	Number of Votes
Hotel to CRS to GDS to Travel Agent to Customer	
Hotel to CRS to Switch to GDS to Travel Agent to Customer	
Hotel to CRS to Customer	
Hotel to CRS to Hotel Company web-site to Customer	
Hotel to CRS to Switch web-site to Customer	
Hotel to CRS to GDS to GDS web-site to Customer	
Hotel to CRS to Switch to GDS to GDS web-site to Customer	
Hotel to CRS to Switch to GDS to Web intermediary to Customer	
Hotel to CRS to DMS to Destination web-site to Customer	
Hotel to Rep Company to GDS to Travel Agent to Customer	
Hotel to Rep Company to Customer	
Hotel to DMS to Customer	
Hotel to individual hotel web-site to Customer	
Hotel to Web intermediary to Customer	
Hotel to GDS to Travel Agent to Customer	

b) Are there any electronic routes not included in the above list that you feel will have a significant effect on hotel distribution in general **in the next 12 months**?

_____

_____

c) Which of the following channels do you feel **currently** have the greatest effect on the volume of business of **your own hotel chain**? As in question (a), indicate the channels that you consider to be most important by assigning them a number of votes. You may vote up to twenty times and can give as many votes as you wish to each channel, so if you consider a particular one to be particularly important, you can give it two, three or even more votes.

Route	Number of Votes
Hotel to CRS to GDS to Travel Agent to Customer	
Hotel to CRS to Switch to GDS to Travel Agent to Customer	
Hotel to CRS to Customer	
Hotel to CRS to Hotel Company web-site to Customer	
Hotel to CRS to Switch web-site to Customer	
Hotel to CRS to GDS to GDS web-site to Customer	
Hotel to CRS to Switch to GDS to GDS web-site to Customer	
Hotel to CRS to Switch to GDS to Web intermediary to Customer	
Hotel to CRS to DMS to Destination web-site to Customer	
Hotel to Rep Company to GDS to Travel Agent to Customer	
Hotel to Rep Company to Customer	
Hotel to DMS to Customer	
Hotel to individual hotel web-site to Customer	
Hotel to Web intermediary to Customer	
Hotel to GDS to Travel Agent to Customer	

d) Are there any electronic routes not included in the above list that you feel will have a significant effect on the electronic distribution of your hotel chain **in the next 12 months**?

_____

_____

e) In relation to **your own hotel company**, what do you feel will happen to each of these channels in the next 12 months in terms of its importance?

Route	Greatly decline	Decline	Remain the same	Grow	Greatly grow
Hotel to CRS to GDS to Travel Agent to Customer					
Hotel to CRS to Switch to GDS to Travel Agent to Customer					
Hotel to CRS to Customer					
Hotel to CRS to Hotel Company web-site to Customer					
Hotel to CRS to Switch web-site to Customer					
Hotel to CRS to GDS to GDS web-site to Customer					
Hotel to CRS to Switch to GDS to Web intermediary to Customer					
Hotel to CRS to DMS to Destination web-site to Customer					
Hotel to Rep Company to GDS to Travel Agent to Customer					
Hotel to Rep Company to Customer					
Hotel to DMS to Customer					
Hotel to individual hotel web-site to Customer					
Hotel to Web intermediary to Customer					
Hotel to GDS to Travel Agent to Customer					

Evaluating the adoption of hotel electronic channels of distribution

a) When presented with an opportunity to distribute over an additional electronic channel of distribution, please describe how you would decide whether to use it or not?

_____

_____

_____

b) Do you take the following into account?

Operational ease of use from the hotel's perspective
Potential of the channel to open up new market segments
Speed at which transaction can be completed
Initial capital cost
Traffic levels
Reputation of the system provider
Potential of the channel to address current market segments
Integration with existing channels from a data maintenance perspective
Security
Speed at which information / rates can be updated

[Responses: Of no importance, of minor importance, of major importance, essential]

c) Are there any other factors that you feel its important to take into consideration?

_____

_____

2. Evaluating the continued use of hotel electronic channels of distribution

a) Do you evaluate the performance of your existing electronic channels of distribution? Y/N

b) If Yes – how often – weekly, monthly, every six months, every year, less often
Other, please specify

c) Please describe the process you use to evaluate your existing electronic channels of distribution.

d) Do you take the following into account?

Potential of the channel to open up new market segments
Transaction cost
Operational ease of use from the hotels perspective
Achieved revenue from channel
Speed at which transaction can be completed
Ability to recognise individual customers
Speed at which information and rates can be updates
Security of the channel
Achieved volume of transactions
Integration with existing channels from a data maintenance perspective

[Responses: Of no importance, of minor importance, neutral of major importance, essential, don't know]

e) Are there any other factors that you take into consideration?

_____

_____

3. About your hotel brand

a) Brand name: _____

b) Number of properties _____

c) Number of hotel rooms: _____

d) Approximately what percentage of your overall reservations arises from electronic channels (CRS, GDS, DMS and Web based channels)?

e) Industry sector: [Options: Mixture, budget, economy, mid-price, upscale, luxury] _____

f) Please enter your email address if you would like to receive a summary of the results of the survey. _____

Thank you very much for your help.

Glossary

CRS	Central Reservations Systems operated by hotel chains to process information requests and reservations on behalf of the group as a whole. Examples include Marriott International's MARSHA or Holiday Inn's Holidex systems.
Customer	The consumer of the hotel product.
Destination web-site	Web sites that use a DMS database as their operations engine. Examples include www.ireland.travel.ie and www.tiscover.com.
DMS	Destination Management System – systems that consolidate and distribute a comprehensive range of tourism products for a specific region, usually with public sector involvement. Examples include Gulliver in Ireland and Ossian in Scotland.
GDS web-site	Web site operated by the GDS using the GDS as its operations engine. Examples include www.expedia.com and www.travelocity.com.
GDS	Global Distribution System – systems that have their origins in the airline reservation systems and that primarily address the travel agent. Examples include Sabre, Amadeus, WorldSpan, and Galileo.
Hotel company web-site	Web site operated by a hotel company providing distribution for the entire group using the CRS as its operations engine. Examples include www.hilton.com and www.accor.com
Individual hotel web-sites	Web sites operated by individual hotels that distribute directly to the customer.
Rep company web-site	Web site operated by a Rep company using its own database as its operations engine. An example is Utell's www.hotelbook.com
Rep Company	Third party company providing distribution services to the hotel in return for a fee. Examples include Best Western and Utell.
Switch web-site	Web site operated by the Switch company using the Switch as its operations engine. An example is www.travelweb.com.
Switch	A system that acts as a bi-directional interface between a CRS and the major GDS. Examples include THISCo and Wizcom.
Travel Agent	An organisation that acts as an advisor and booker on behalf of customers seeking travel products. Examples vary from large international chains such as American Express Travel and Rosenbuth International to small independent operations.
Web intermediary	Web based company that assists in distributing the hotel product. Examples include www.worldres.com and www.all-hotels.com.

Appendix 4

Case Study – Evaluating Alternative Channel for a Paris Hotel

Property Description

Throughout this discussion, the person using the model is a senior member of the management team (reporting directly to the general manager of the property), and has direct responsibility for distribution – both electronic and conventional. The property itself is located in Paris city centre, is large (> 500 rooms), operates at the luxury end of the market, has extensive conference and banqueting facilities and is owned and managed by a major international hotel chain. Its clientele is mixed; by a small percentage, the majority are resident outside of France; and midweek there is primarily a business clientele, with primarily leisure guests at the weekend. Occupancy levels are currently approximately 70%, although there are many seasonal variations. Distribution is essentially managed at the property level, with some guidance from the chain. Fidelio is used as both the Property Management System and the reservations system at the property level, and while the chain has a Central Reservation System, there is no electronic interface between the property and the central level. All interactions between the property and central reservations must be performed manually. Responsibility for keeping rates and availability up-to-date on all channels rests with the property, and managing this process is currently the manager's biggest challenge. The chain uses one of the major Switch Companies to connect to two of the major GDS.

Distribution Channel Options

The subject was asked to use the model to evaluate three alternative distribution channels currently being reviewed for implementation by the chain / property. Each is discussed briefly below:

Sabre is one of the four major Global Distribution System currently available in the marketplace. As was discussed in Chapter Two, the GDS originally exclusively targeted the travel agent market, but have recently begun acting as the bookings engine behind a variety of different channels that communicate with the end consumer using the Web. Thus it fits the definitions of several of the routes identified in Chapter 3, including H-CRS-S-GDS-TA-C, H-CRS-S-GDS-GW-C and H-CRS-S-GDS-WI-C. Further information on Sabre can be found on www.sabre.com.

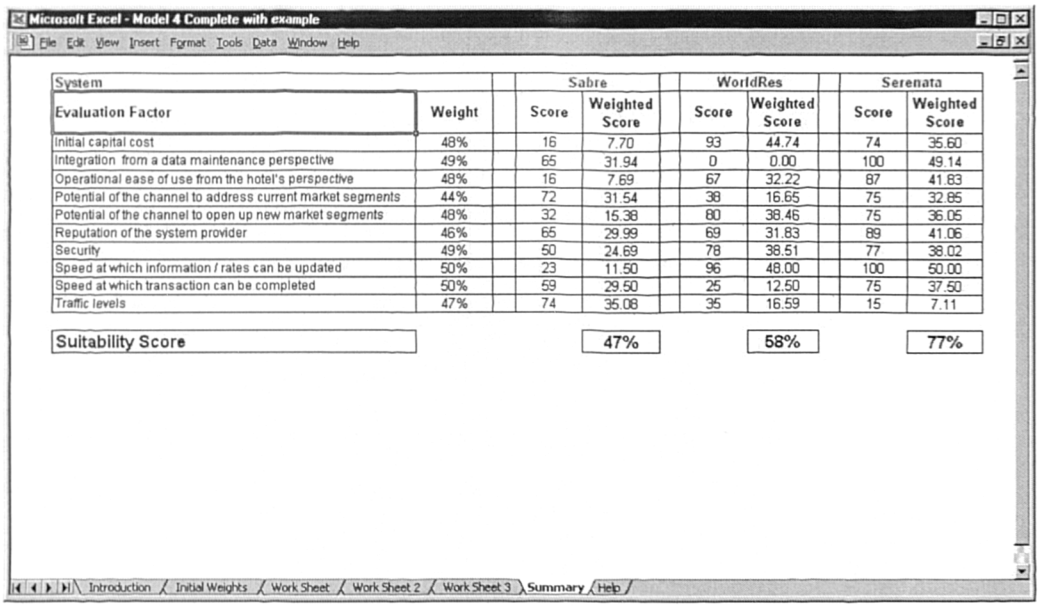
WorldRes.com is best known as a Web Intermediary – acting as a Web-based reservation system for its members and forwardly distributing their inventory not only to their own consumer Websites www.placestostay.com and www.bedandbreakfast.com, but to a large number of partner Websites that either directly or indirectly sell travel products. Thus WorldRes.com fits the profile of H-WI-C and H-WI-GW-C in the topology outlined in Chapter Three. Further information on WorldRes can be found on www.worldres.com.

Serenata Infobook is a system that facilitates availability / rate distribution through a property's Website. It interfaces directly with the hotel's Property Management System – taking its availability / rate data directly from this source, automatically updating the PMS database when a reservation is made and requiring minimum manual intervention on the part of the property. As such, Serenata can be classified as H-W-C in the topology outlined in Chapter Three. Further information on Serenata can be found on www.serenata.com.

The Assessment

As was mentioned above, the test subject was sent the model and asked to evaluate each of the channels. A printout of his assessment of each individual channel is included in Appendix Five, and a discussion of his explanation as to why he assigned particular scores to particular factors is presented below. However, as can be seen from Figure A4.1, it is clear that in this example, the model was able to balance the portfolio of contradictory factors against each other to identify the channel(s) most suitable for adoption by this property at this time. In this case (and it is worth stressing again that these results are illustrative only and not intended to be interpreted as indicative of anything other than an analysis of these three channels by this person at this time), Serenata emerges as being the system that most clearly matches their needs. This is followed by WorldRes and lastly by Sabre, with a much lower score.

Figure A5.1 – Case Results Illustration



System		Sabre		WorldRes		Serenata	
Evaluation Factor	Weight	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Initial capital cost	48%	16	7.70	93	44.74	74	35.60
Integration from a data maintenance perspective	49%	65	31.94	0	0.00	100	49.14
Operational ease of use from the hotel's perspective	48%	16	7.69	67	32.22	87	41.83
Potential of the channel to address current market segments	44%	72	31.54	38	16.65	75	32.85
Potential of the channel to open up new market segments	48%	32	15.38	80	38.46	75	36.05
Reputation of the system provider	46%	65	29.99	69	31.83	89	41.06
Security	49%	50	24.69	78	38.51	77	38.02
Speed at which information / rates can be updated	50%	23	11.50	96	48.00	100	50.00
Speed at which transaction can be completed	50%	59	29.50	25	12.50	75	37.50
Traffic levels	47%	74	35.08	35	16.59	15	7.11
Suitability Score			47%		58%		77%

Discussion of respondent's assessment

Having completed the analysis using the computerised tool, the test subject was asked to explain why each score had subjectively been assigned to each of the factors for each of the systems. A summary of his comments is provided below:

- In relation to Sabre, the subject felt that using this channel from the hotel's perspective would be difficult because rates and availability would have to be updated manually on the chain's CRS so that they could be distributed onwards to the GDS. Thus the process of updating the data would not be entirely under the property's control, as staff at the central level would perform the actual input work. This would have implications in terms of speed of response, accuracy and responsibility, and would make using the channel effectively frustrating. This limitation also had an effect on his perception of the speed at which availability / rates could be updated, as he pointed out considerable time delays, caused by both the manual interaction with the central reservations division and also by the nature of the GDS themselves. Similarly, once a reservation was been made, there would be a delay between the reservation being processed and the property receiving the guest's details, again because of the lack of integration, but the speed would be more or less acceptable in this case. Overall, he pointed out that Sabre would be very effective at servicing the properties existing target markets – particularly the business market segment – both through travel agents and over the Web. Thus, despite the fact that he does not feel that using Sabre would help the hotel to address additional target markets, he is quite favourably disposed towards the overall market reach of the system. In addition, he felt that traffic levels on the

channel were high and would grow further as a result of Sabre's efforts with Web distribution, and also that the perception of the system within the industry was quite professional. As was mentioned above, Sabre would integrate with their existing database to a certain extent, as it would connect via an existing connection with a Switch company and feed off the central reservation database. However it would not integrate back to the property level, leading to many of the problems noted above. Furthermore the costs of starting to use the system were also perceived negatively, although when questioned further, he was unclear as to what these costs might be as the majority should already have been incurred when connecting to the other GDS. Lastly, he was ambivalent about security, mentioning that he had never considered the issue in relation to the GDS and had never seen it mentioned as one of their selling points.

- In relation to WorldRes, the subject felt that the channel would be easier to use from the hotel's perspective as they could manage inventory for themselves and thus the reliance on the central office would be eliminated. However, having to use a Web based tool to do so is not as convenient as they would like it to be, as they would have to manage inventory in two places – hence the only slightly positive score for ease of use. He also felt that WorldRes's portfolio of routes to the customer, as they currently stand, did not effectively service the property's existing clientele, but did have a lot of potential as they matched well with market segments that they wished to develop, particularly those from the leisure market. The lack of integration and necessity to go onto the Web to check for new reservations meant that the speed with which a transaction was completed was not perceived very favourably, while traffic levels were also considered to be

considerably lower than they would like. However the biggest drawback that he saw with the system was that WorldRes would not integrate in any way with their existing systems, thus necessitating time-consuming maintenance of data and manual retyping of reservations data. On a more positive note, the capital cost of starting to use the system was perceived as being low, the system is well perceived within the industry, and once rates / availability are updated using the Web based tool, such changes are immediately available to users of the system. Lastly, on the issue of security, he noted that WorldRes uses secure channels and encryption to protect data and reservations on the Web, and thus perceived them to be making efforts in terms of the use of security.

- Lastly, in relation to Serenata, the channel was perceived to be the easiest to use of the three presented as it integrates fully with the Property Management System being used in the hotel (i.e. Fidelio) – taking its rates / availability directly from the system and automatically adding reservations to its bookings database. So in effect using the system would require little ongoing effort from the property, as it would in effect function automatically on a day-to-day basis. He felt that, if adopted, the channel would serve many of their existing market segments, as it would provide reservations capability on the property's website, which would also help open up new market segments that are not currently serviced. However, in comparison to the other channels, traffic levels were forecast to be low. Overall, his perception of the system was positive, mainly as a result of its integration with the PMS database (as discussed above), which subsequently would have an effect on the speed at which transactions could be completed and the speed at which rates and availability could be updated. Furthermore, the initial capital cost was

perceived to be relatively low, and also he felt that the channel supplier had a professional reputation – being founded and run by ex-Fidelio employees. Lastly, as with WorldRes, security is sold as one of the features of the system, which added to his positive perception.

In examining the explanations above, it is interesting to note how the responses and reasoning behind the scores are to a great extent interconnected, and how factors both support and contradict each other. Thus, in this demonstration, it can be seen that the computerised tool has helped to balance many conflicting factors and to bring structure, rigor and objectivity to the evaluation process. Performing such an analysis in the absence of the computerised tool would be difficult, as maintaining different priorities for different factors would be frustrating to factor into the evaluation. Thus the tool may have utility as a support mechanism for the channel adoption decision.

Appendix 5

Example of comparative assessment of alternative distribution channels using computerised model

A comparative evaluat on m del for hotel l ctronic channels of distribution.

Purpose:
The purpose of this model is to allow the user to comparatively assess the suitability of alternative electronic channels of distribution for use in a hotel operation. This is achieved by asking the user to give their opinion on a range of characteristics of each channel being considered, and then calculating a weighted suitability score for each option.
More details on how to use this model can be obtained by clicking here

Created by: Peter O'Connor
Date: March 20, 2001
Version: 6

P ease en er the names of the chann s to be as essed

Channel 1	Sabre
Channel 2	WorldRes
Channel 3	Serenata

Factor	Delphi		Industry		Average	Personalised
	Rank	Weight	Rank	Weight	Weight	Weight
Initial capital cost	4	48%	6	47%	48%	
Integration with existing channels from a data maintenance perspective	8	47%	1	50%	49%	
Operational ease of use from the hotel's perspective	1	47%	7	48%	48%	
Potential of the channel to address current market segments	7	44%	9	43%	44%	
Potential of the channel to open up new market segments	2	47%	5	48%	48%	
Reputation of the system provider	6	48%	10	43%	46%	
Security	9	48%	2	50%	49%	
Speed at which information / rates can be updated	10	50%	3	49%	50%	
Speed at which transaction can be completed	3	50%	4	49%	50%	
Traffic levels	5	47%	8	47%	47%	
Use this set of weights (please select one!)	☐		☐		☑	

Selected

Channel being evaluated: **Sabre**

The worksheet below will ask you ten questions about the channel being assessed. Having examined the system, please answer each question to the best of your ability. Each answer is subjective, and is designed to act as a prompt to make you think about each issue. Answers should reflected your educated opinion. Once you have considered each factor, the relative suitability of each system assessed will be displayed on the Summary screen.

A more detailed explanation of each issue can be obtained by clicking on the Help hyperlink (highlighted in blue) following each question.

From the perspective of managing distribution, please rate the ease of use of the channel. Help

Difficult — Easy

Please assess the potential of the proposed channel to service your existing market segments. Help

Services existing markets badly — Services existing markets well

Will the proposed channel help your property to address new markets? Help

Focus on existing markets — Address new target markets

Please rate the speed at which a transaction is completed with the customer Help

Slow — Fast

Please rate the level of investment required to start using the channel. Help

High — Low

Please rate the traffic levels on the proposed channel. Help

Low — High

How would you rate the professionalism of the supplier of the system? Help

Poor — Excellent

Does the channel integrate with existing room inventory databases? Help

Not at all — Completely

How quickly are changes in availability & rates reflected on the live system? Help

Delayed — Immediately

Please rate the security of the channel Help

Insecure — Secure

Please click on the summary tab below to see the assessment of this channel.

Channel being evaluated: **WorldRes**

The worksheet below will ask you ten questions about the channel being assessed. Having examined the system, please answer each question to the best of your ability. Each answer is subjective, and is designed to act as a prompt to make you think about e

A more detailed explanation of each issue can be obtained by clicking on the Help hyperlink (highlighted in blue) following each question.

From the perspective of managing distribution, please rate the ease of use of the channel. Help

Difficult — Easy

Please assess the potential of the proposed channel to service your existing market segments. Help

Services existing markets badly — Services existing markets well

Will the proposed channel help your property to address new markets? Help

Focus on existing markets — Address new target markets

Please rate the speed at which a transaction is completed with the customer Help

Slow — Fast

Please rate the level of investment required to start using the channel. Help

High — Low

Please rate the traffic levels on the proposed channel. Help

Low — High

How would you rate the professionalism of the supplier of the system? Help

Poor — Excellent

Does the channel integrate with existing room inventory databases? Help

Not at all — Completely

How quickly are changes in availability & rates reflected on the live system? Help

Delayed — Immediately

Please rate the security of the channel Help

Insecure — Secure

Please click on the summary tab below to see the assessment of this channel.

Channel being evaluated: **Serenata**

The worksheet below will ask you ten questions about the channel being assessed. Having examined the system, please answer each question to the best of your ability. Each answer is subjective, and is designed to act as a prompt to make you think about e

A more detailed explanation of each issue can be obtained by clicking on the Help hyperlink (highlighted in blue) following each question.

From the perspective of managing distribution, please rate the ease of use of the channel. Help

Difficult — Easy

Please assess the potential of the proposed channel to service your existing market segments. Help

Services existing markets badly — Services existing markets well

Will the proposed channel help your property to address new markets? Help

Focus on existing markets — Address new target markets

Please rate the speed at which a transaction is completed with the customer Help

Slow — Fast

Please rate the level of investment required to start using the channel. Help

High — Low

Please rate the traffic levels on the proposed channel. Help

Low — High

How would you rate the professionalism of the supplier of the system? Help

Poor — Excellent

Does the channel integrate with existing room inventory databases? Help

Not at all — Completely

How quickly are changes in availability & rates reflected on the live system? Help

Delayed — Immediately

Please rate the security of the channel Help

Insecure — Secure

Please click on the summary tab below to see the assessment of this channel.

System			Sabre			WorldRes			Serenata	
Evaluation Factor	**Weight**		**Score**	**Weighted Score**		**Score**	**Weighted Score**		**Score**	**Weighted Score**
Initial capital cost	48%		16	7.70		93	44.74		74	35.60
Integration from a data maintenance perspective	49%		65	31.94		0	0.00		100	49.14
Operational ease of use from the hotel's perspective	48%		16	7.69		67	32.22		87	41.83
Potential of the channel to address current market segments	44%		72	31.54		38	16.65		75	32.85
Potential of the channel to open up new market segments	48%		32	15.38		80	38.46		75	36.05
Reputation of the system provider	46%		65	29.99		69	31.83		89	41.06
Security	49%		50	24.69		78	38.51		77	38.02
Speed at which information / rates can be updated	50%		23	11.50		96	48.00		100	50.00
Speed at which transaction can be completed	50%		59	29.50		25	12.50		75	37.50
Traffic levels	47%		74	35.08		35	16.59		15	7.11
Suitability Score				**47%**			**58%**			**77%**